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## MILITARY ESSAY.

(*Honourably Mentioned.*)

*Subject :*

"THE RELATIVE ADVANTAGES AND DISADVANTAGES OF VOLUNTARY AND COMPULSORY SERVICE BOTH FROM A MILITARY AND A NATIONAL POINT OF VIEW."

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"*Per Angusta ad Augusta.*"

WHEN the Council of the Institution selected the subject for the Prize Essay this year, they did not, it is presumed, intend that it should be dealt with in merely general terms. An abstract discussion of the relative advantages and disadvantages of voluntary and compulsory service would be of little practical utility or interest to us British soldiers and citizens. Nor would a comparison between the military systems of the Continent, and the special development of the voluntary system which is exemplified in our Army, assist us in forming correct opinions regarding the general characteristics of the two methods of maintaining an Army. The circumstances of the British Empire are such that the system which has been adopted by the Continental nations could not be applied to our Army as a whole, whereas our system would be equally inapplicable to the requirements of other European nations. The voluntary and compulsory systems are, alike, natural developments which have grown out of the necessities of the nations adopting them; and as compulsory service has been forced by those necessities on the nations of the Continent, so our existing system, based on voluntary enlistment, has been elaborated with a view to the peculiar conditions of the Empire, and to our avowed foreign policy of avoiding European complications. How long it will be possible to maintain at once this policy, and the prestige on which whatever influence we still possess in foreign affairs, as well as the stability of the Empire itself, largely depend, is matter of conjecture. It is not impossible that circumstances beyond our control may, in the future, compel us to choose which of the two we shall abandon. That, once confronted by this dilemma, the British people would hesitate which course to pursue is incredible, when it is recollected

what an outburst of dormant patriotism has in the past been evoked by any tangible menace to the safety or greatness of the Empire. Nor is it certain that the natural barrier which has protected us for so many centuries can always be relied on to secure us against attack at home.

It is not, therefore, beyond the range of possibilities that we may at some future time be obliged, by force of circumstances, to place our military forces on a footing in some degree proportionate to that of the Armies of the great Continental Powers; and as the system of voluntary enlistment is strained to the utmost in maintaining our Army at its present strength, the nation will then either have to submit to an enormously increased military expenditure, or else to face the alternative of compulsory service. In view of this eventuality, it is proposed to deal with the subject of this essay with special reference to the requirements of our Empire; and after having traced briefly the growth of the two systems, and discussed their general characteristics, to give some consideration to the special difficulties which would be encountered in applying the compulsory system to our Army.

#### I.—THE DEVELOPMENT OF ARMIES.

In the early ages the provision of an armed force in Great Britain was directed to the protection of the kingdom from foreign invasion and internal disturbances, and was attained by a "general levy" of the entire male population between the ages of fifteen and sixty years. Each man was obliged to find his own arms and equipment, and those whose circumstances permitted had, in addition, to provide horses and other necessities in proportion to their means for the force in general. The general levy was thus based on the principle that every able-bodied man was bound to assist in his own person, as well as with his substance, in the defence of his country and in the maintenance of order.

With the Norman invasion the feudal system was introduced, out of which arose an additional armed force, the "feudal levy," based on the obligation of holders of land in feoff from a superior lord to give personal service, with their retainers, to that superior for a certain number of days in the year.

Gradually in respect of both the general and feudal levies, substitution came to be allowed, and knights were excused from rendering personal service in consideration of their providing a certain number of armed men. Those who were unwilling to serve escaped the obligation by contributing out of their means to the provision of others who were willing. Sometimes only a portion of the levies was called out, and those not required were made to pay towards the maintenance of the force embodied.

Until the end of the thirteenth century the army raised by these means was, on various occasions, obliged to serve abroad; but opposition gradually developed against the power of the Crown to make men take part in foreign wars, till in the first half of the fourteenth century Acts were passed providing that no man should be compelled to serve out of his county except in the event of an invasion.



Concurrently with the feudal system a body of mercenaries was maintained, recruited principally from foreigners who followed the profession of arms as a means of livelihood. There was also a force of bowmen, recruited at home, who were liberally paid. As the difficulty increased, of making men serve abroad who were raised by the levy system, the force of mercenaries was strengthened. Men were enlisted on war breaking out, and were discharged on its termination.

The general levy was, up to the end of the sixteenth century, embodied only when actually required to fight; but at this period it became customary to call out a portion of the levy each year for a period of training under the lords-lieutenant of counties. These trained bodies were known as "trained bands."

It is evident that the feudal levy, on account of the obligation which lay upon the various fractions of which it was composed to render service to the great nobles, as well as the general obligation to serve the Crown, as apart from the question of the defence of the kingdom in case of invasion, constituted a standing menace to the peace of the country and the liberties of the people. Hence it was finally abolished at the Restoration. The same epoch marks the re-organisation of the general levy, including the trained bands, on a constitutional basis, as the Militia; as well as the inauguration of a Standing Army—at first an insignificant force, kept in the service of the Crown, and recruited by voluntary enlistment. The increase made in the latter by James II. led to the provision in the Bill of Rights regarding the illegality of maintaining a Standing Army without the consent of the Parliament, which remains to this day embodied in the Army Annual Act. The Long Parliament, in 1640, passed an enactment declaring the impressment by the Crown of men to serve in the Army to be illegal, and since the Restoration the Regular Army has been recruited entirely by voluntary enlistment.

The Militia was, until 1757, maintained by a system of general liability to serve in person or else provide a substitute. It was liable to be embodied for training or in the event of invasion or insurrection. But the Rebellion of 1745 showed that the troops obtained, on an emergency, under this haphazard system—only a fraction of whom might have received previous training, and who were necessarily devoid of organisation and cohesion—were quite inadequate for any purpose requiring a trained and organised force; and in 1757 the popular feeling, which was aroused by a panic regarding a French invasion in the preceding year, led to the re-organisation of the force on a somewhat more satisfactory basis. Each parish was obliged to provide a certain number of men, selected by ballot, from those between eighteen and sixty years of age, who were liable to serve for three years, and were subject to an annual training. Paid substitutes were, however, allowed, and part of the quota might be composed of volunteers. In 1808, a "local" Militia was raised by ballot, without substitution, supplemented by volunteers. In 1852, the old Militia, which had fallen into disuse after the conclusion of the Peninsular war, was re-organised on the principle of voluntary enlistment with the ballot in reserve, on which basis it remains at present.

The local Militia has been suspended since 1829, but the law for its enrolment has not been repealed, and it can still be raised in each county, by ballot, should occasion require.

The history of the Volunteer movement is so well known as hardly to require notice in this paper. Its inception dates from the early years of the century, at which period the numbers of the force attained 463,000 men; but after the great war the movement died out, only to be resuscitated with renewed vigour, in 1859, by the fear of a possible French invasion.

Meanwhile, the Regular Army fluctuated in numbers as the requirements of different epochs of our history demanded. During the eighteenth century its peace establishment averaged about 17,000, but this was, in time of war, increased on different occasions to over 100,000, and at one period (in 1711) it attained to 200,000 men, the war establishments being largely composed of foreign mercenaries. The outbreak of the revolutionary wars towards the end of the century necessitated a considerable increase of the Army, and during the succeeding years great difficulty was experienced in keeping up the required establishment. The pernicious system of allowing substitution in the Militia greatly enhanced the cost of procuring recruits for the Regular Army, numbers of eligible men selling themselves into the Militia, so that the cost of a Line recruit in bounty and levy-money rose, in 1805, to nearly £40. At the same time the Militia acted as a sort of Reserve to the Regular Army, for during the French war some 100,000 men passed from the Militia to the Line. Still, despite the lowering of the physical standards, and the enlistment of men between seventeen and forty years of age, the Army during this period averaged over 20,000 men below strength, the maximum establishment being about 255,000.

After the peace of 1815 a period of lethargy supervened with regard to military matters, from which the nation was rudely awakened by the Crimean war. The straits to which the field army was reduced by the want of reinforcements need not be enlarged on here. The expedient of raising foreign mercenaries had to be again resorted to; drafts were, contrary to the laws then in force, made from the Militia, and the ranks of our fighting regiments were filled with immature youths, untrained for war, and physically unfit to undergo the hardships of a campaign. Happily the lesson was taken to heart without being emphasised by a disaster to our arms, and the recollection is still fresh when, a few years later, the unprecedented successes of the Germans in war finally convinced us of the necessity of re-organising the Army on a modern basis.

Up to a certain point the history of Continental Armies is analogous to our own. The general levy, the levy under the feudal system, and the employment of mercenaries, as well as, in a lesser degree, the system of voluntary service, belong to certain phases in the development of all Armies. In France, the feudal system terminated with the English wars; and in 1445 the first Standing Army of Europe was established by Charles VII., and was used by him to repress the independence of the

feudal aristocracy, and to strengthen the power of the Crown. The force consisted of 16,000 infantry and 9,000 cavalry, raised partly by requisition, partly by voluntary enlistment, and partly by the entertainment of mercenaries. Other monarchs soon followed suit, and paid troops generally supplanted the knights and their retainers. Mercenaries formed a large proportion of these Armies. The Army of the great Frederick was recruited from various parts of Germany and from foreign countries, as well as by Prussian levies and volunteers. Nearly one-half the Prussian Army which fought at Valmy was mercenary, the ranks being filled with deserters from all countries and volunteers from different quarters of the Continent. It was animated by no patriotic feeling, and was held together only by the stern bond of discipline.

The preliminary successes of the French arms under Dumouriez were followed by a coalition among the great European monarchies, to which the latter were impelled by the dread with which they regarded the probable spread of the revolutionary principles to which the French nation had become irretrievably committed by the execution of Louis XVI. The National Convention foresaw that a more determined and more general attack was about to be directed against the comparatively meagre forces which they had at their disposal. The internal political situation was not yet ripe for the imposition of compulsory service; nor, indeed, did the idea of such a measure suggest itself to the revolutionary government, whose hands were amply occupied with internal affairs of more pressing importance than the question of military re-organisation had yet assumed. The first step towards the conscription was, however, under the pressure of immediate necessity, taken at this time; one which led, a few years later, to the institution in France of general liability to military service, and, in consequence, to the adoption of the same principle, in sheer self-defence, by all the great Continental Powers as the basis of their Armies. It became necessary to increase the Army by 300,000 men, and as this number was not forthcoming under the existing method of recruiting, the National Convention decreed, on the 24th February, 1793, that they should be levied from the National Guard, all the members of which, between the ages of eighteen and forty-five years, were rendered liable to serve in the Army, widowers and married men who had children being alone exempted. A few months later the gravity of the military situation had so developed that the Army was found to require further expansion, and on the 23rd August a *levée en masse* of the entire male population was decreed. This measure was not again resorted to, the Army being maintained during the five succeeding years by the retention of the men so raised; but in 1798 the effective strength had become so diminished by war, disease, and desertion, that the necessity for the adoption of some regular and permanent arrangement for keeping up the establishment came to be recognised. In the interval, Holland, Germany, Switzerland, and Italy had been invaded by the French Armies, and all the European Powers except England had come to terms with the Republic. All alike, however, chafed under the humiliations to which they had been subjected, and only awaited a favourable occasion to renew

the struggle. The wished-for opportunity seemed to have occurred when the British naval victory of the Nile cut off the French Army in Egypt. All Europe rushed to arms against the Republic. Prussia and Spain were the only Powers of note which held aloof, the former recruiting her shattered forces, the latter still bound by the treaty of 1795. Even the Turk, aroused from his lethargy, and forgetting for the moment ancient animosities, marched to battle beside the hated Muscovite.

At this juncture, General Jourdan came forward as the saviour of France with a scheme for conscription. The national feeling was now ripe for the introduction of some system which should form an integral part of the constitution, and not be, as was the case with former measures, a mere spasmodic effort to avert a crisis by some expedient which would secure a temporary increase to the Army. The industries of the country had been thrown out of gear by the shock of revolution, masses of the people were out of employment, a general unrest and excitement prevailed, and the dangers which menaced the Republic were generally appreciated. Hence the Government were able to take time by the forelock, and the constitutional change which introduced conscription was received with general acclamation, without the necessity for its adoption having been established—as was subsequently the case with Prussia—by the horrors of invasion and the ignominy of defeat.

The origin of conscription has been considered at some length, so that it may be clear how France became gradually, by force of circumstances, compelled to resort to it in order to defend the newly-formed Republic from being overthrown by the vast forces which were assembling for its destruction. For a very general impression seems to prevail among English people who have no special knowledge of the subject, that this French device of conscription was in some way unjust, oppressive, and tyrannical. We are not a military nation, and those who have catered for the educational needs of our youth have, for many years, provided histories, in which wars, and matters connected with wars, are either treated of as merely interesting episodes, or else passed by with disdain and disgust as of no import with respect to social development, and as a remnant of barbarism which will cease to disturb the peace of the Utopia to which they believe the march of civilisation will eventually lead the human race. Moreover, the history of the wars of this period, associated as it is with the violence and bloodshed which pollute the pages of the Revolution, is apt to borrow—at least in imagination of the reader, if not in that of the writer—something of the character of the internal agonies which convulsed the nation at the time. No doubt the revolutionary government conceived the idea of forcing the propaganda of the Revolution on other nations at the point of the sword, after having been forced to enter on a war, in which the fact that it assumed on the French side the entirely novel character of a national war as opposed to a war of dynasties gave to the French arms a force and impetus pushing them surely on to conquest. But an impartial study of history shows that the causes which really led up to the adoption of conscription were not revolutionary fanaticism, nor lust of conquest, but the stern necessities

of national defence. Although the criminal excesses which mark the internal history of the country can only be regarded with reprobation, it must at the same time be admitted that the declaration of Pilnitz and the consequent marshalling of the armed forces of Europe to crush the revolutionary movement—measures which were, moreover, largely instrumental in precipitating those excesses—compelled France either to throw all her energies into the active prosecution of the war, or else to submit to the overthrow of the form of government which she had herself elected, and to the imposition of one in accordance with the dictates of foreign Powers. To await attack would have been but to court defeat, and all the miseries which attend invasion.

The new law declared that every Frenchman had the right to serve as a soldier for a certain period of his life, namely, between the ages of 20 and 25 years. The youth of the country were divided into five classes according to age, and each of these classes could be called out successively as the necessities of the situation might demand, beginning with the first class (men aged from 20 to 21), and with the youngest of each class. In peace the conscripts were obliged to serve till the age of 25; in war the duration of service was unlimited. In the event of imminent danger the Government were authorised to have recourse to a *levée en masse*, as in 1793.

Two hundred thousand conscripts were accordingly added to the Army in September, 1798; and so impressed were all classes with the paramount necessity of maintaining the Republic against the onslaught of the European Powers, that even the opposition did not seriously thwart the Directory. A sum of 90 million francs was voted for the equipment of the new conscripts, the total budget being increased by 125 millions. This was met by the sale of national domains at eight times their annual produce.

Such was the first crude conception of a system of compulsory service, and, for a time, it worked sufficiently well. These were the days of small Armies—the opposing forces at Marengo numbered only some 30,000 each—and efficient Armies of sufficient strength were maintained during the earlier wars of the Consulate and the Empire. The scheme was, however, very imperfect and had grave drawbacks. In the later wars, owing to the method of replacing casualties by levies drawn from the classes liable to service, the ranks were filled with half-trained conscripts, and the strength of the nation was sapped by the enormous losses incurred during the many years of incessant warfare. There were no trained reserves, nor any efficient force in second line for home defence. The manner in which the conscription was carried out inflicted intolerable hardships on the lower classes. But the principle that it is the right of every able-bodied man to serve in defence of his country and its interests had been accepted by the leading military nation of the period, and all the Continental nations were certain to be driven, sooner or later, to the adoption of some system analogous to that initiated in France as the only means by which their independence and the balance of European power could be maintained.



Prussia was the first to recognise this necessity, but, less fortunate than France, she had to wait till the catastrophe of 1806 awakened the popular feeling which was necessary to admit of the drastic constitutional changes required for a satisfactory re-organisation of the Army. It was not that the disasters of the Jena campaign were consequent upon any deficiency of the Prussian Army as regards numbers or efficiency, for the successive defeats sustained were notoriously due to bad strategy and mismanagement. Still, a general conviction arose that military reforms were imperative, and the foresight of Scharnhorst and Gneisenau caused them to seize the opportunity for initiating a new military system which, by gradual development, has given Germany the largest and most efficient Army in the world.

The conditions of the peace of Tilsit limited the Prussian Standing Army to a strength of 42,000 men. By this provision Napoleon supposed that he had reduced Prussia to a condition of military impotence. On the contrary, it resulted in the Army being re-organised on a more formidable scale than before. The short-service system was devised. The men forming the Standing Army were retained with the colours only for a sufficient time to enable them to learn their work thoroughly as soldiers, and they were then sent back to their homes, where they remained in readiness to come forth again on a declaration of war necessitating a call to arms. Meanwhile their places in the ranks were filled by fresh recruits who, in their turn, were disposed of as their predecessors had been. This system worked with such smoothness and secrecy that the French, whose garrisons dominated the whole country, were unconscious of the hostile forces which were steadily developing in their midst. Thus was formed the Army which took such an important part during the last three years of the war, and whose deficiency of training and war experience was compensated for by the heroic patriotism which animated all ranks.

In Prussia, as elsewhere, the Army suffered from the re-action which set in after the strain of long years of war, and it degenerated practically, into a small Standing Army with an ill-trained and undisciplined Militia in the second line. All the machinery of mobilisation, which had been elaborated during the earlier years of the century, from neglect and disuse went out of gear, and the two attempts at mobilisation, in 1849 and 1859, proved utterly abortive. The Active Army was, at this period, maintained by an annual contingent of about 40,000 men, who, after three years' service in the ranks, passed for two years into the Reserve. The latter was, therefore, quite insignificant, and the Active Army could only be completed on mobilisation by drafts from the Landwehr. It was hardly to be expected that, unless the situation were such as to excite popular enthusiasm, the men of the Landwehr, who had arrived at mature years, and become absorbed in the avocations of peace and the tranquillity of private life, would respond generally to such a demand. But the modification required to place the Army on a satisfactory footing was not difficult to make. It is obvious that the mobilised strength of the active portion of an Army organised on the Prussian principle depends on three

factors:—1. The peace establishment. 2. The period of service with the colours. 3. The period of service in the Reserve. The first and second conditions jointly determine the strength of the annual contingent and therefore the numbers which pass each year into the Reserve, while on the last depends the strength of the Reserve. All that was necessary was, therefore, to increase the peace establishment and the period of Reserve service. The former was, in 1859, raised from 120,000 to 180,000, and the latter from two to four years. It is instructive to compare the resulting gain to the Army in respect of numbers:—

OLD SYSTEM.					
Standing Army	-	-	-	-	120,000
Annual contingent	=	$\frac{120000}{3}$	=	40,000	
Reserve	=	$40,000 \times 2$	=	-	80,000
Total strength of Army on Mobilisation					200,000 <sup>1</sup>

NEW SYSTEM.					
Standing Army	-	-	-	-	180,000
Annual contingent	=	$\frac{180000}{3}$	=	60,000	
Reserve	=	$60,000 \times 4$	=	-	240,000
Total strength of Army on mobilisation					420,000 <sup>1</sup>

The addition of 20,000 men yearly to the contingent of the Active Army, and the retention of Reserve men for four years instead of two, did not greatly increase the burden sustained by the population, while it resulted in the effective strength of the Army being more than doubled. Hence, Prussia was able in 1866 to put with ease nearly 300,000 men into the field, and the machinery for mobilisation had been repaired to such purpose that the raising of the Army from the peace to the war establishment was effected with the utmost smoothness and facility.

## II.—THE COMPULSORY SYSTEM IN GERMANY.

Let us now glance at the main features of the present German military system. Situated as she is between two great military Powers, Germany, in order to render her position secure, has been compelled to develop her military resources to the utmost, and having at the same time rare facilities for doing so, the system she has devised may be considered the most perfect compulsory one in existence.

The estimated expenditure on the German Army for the 1895-96 was £23,610,620.<sup>2</sup> The peace establishment was, by the Army Bill of 1893, fixed at the strength of 479,229, exclusive of officers, non-commissioned officers, one-year volunteers, and non-combatants. The numbers of the three former amount to 109,319, and of the last to 4,901. The total peace strength therefore reaches the total of 593,449.<sup>3</sup>

<sup>1</sup> Not allowing for "waste." The actual totals, allowing for waste at the rate of 3 per cent. per annum, would be 182,708 and 372,516 respectively.

<sup>2</sup> "Statesman's Year-book," 1896, p. 544.

<sup>3</sup> R. U. S. I. JOURNAL, Vol. XXXVII., p. 1,255 *et seq.*

Every German, with the exception of members of reigning houses, is by law liable to personal military service, and no substitution is allowed. This liability extends from the completion of the seventeenth to that of the forty-fifth year of age. Every man liable to service is required, on pain of certain penalties, to report himself between the 15th January and the 1st February of the year in which he completes his twentieth year of age to the recruiting authorities of the place where he resides. About 400,000 men yearly attain the military age, and the number which remain after certain deductions have been made form the annual contingent. The number deducted comprises such as are physically, mentally, or morally unfit to serve, and those who are for special reasons allowed to postpone the commencement of service. Postponement is allowed in the case of men who have destitute relations dependent on them, or whose trade or studies would suffer by their being withdrawn from their prosecution. Men in prison or undergoing trial, and those temporarily unfit from physical causes, are also postponed. The number to be taken for the annual contingent of the Active Army is so determined as to allow a margin to provide for casualties, and the individuals composing this number are decided by lot. Those required to draw lots include, in addition to the men who have become liable to service in the current year, such men as were in previous years allowed to postpone their service, and are now held liable to serve, as well as men of former contingents who were not taken on account of their being in excess of the number required. Those who fail to report themselves punctually are deprived of the privilege of drawing lots.

When the requirements of the Active Army have been thus completed, the remaining men who, having drawn high numbers, are not taken for the Active Army, are drafted into the Ersatz Reserve. The strength of the annual Ersatz contingent is such that seven will suffice to meet all the first requirements of the Army and its depôts on mobilisation. It is completed by the addition of:—1. Men specially exempted from active service for family reasons. 2. Men "conditionally fit" (those with minor bodily defects, or who are below the regulation measurement). 3. Men temporarily unfit, but who are likely to become fit in time.

The whole system of recruiting and mobilisation is based on the territorial organisation of the Empire. The territory is divided into nineteen army corps districts, each of which is again divided into four or five brigade districts.<sup>1</sup> The army corps commanders are charged with the general superintendence of the recruiting and mobilisation arrangements within their districts, and when they take the field on the declaration of war their places are filled by officers from half-pay, who hold dormant commissions for the purpose. Each brigade district is divided into a certain number of Landwehr battalion districts, generally four or five, according to the number of the population; and each of these is again sub-divided into recruiting circles, corresponding with

<sup>1</sup> There is a separate district for the 25th (Hessian) Division comprising two brigade districts.

the civil sub-districts, for recruiting purposes, and company districts for mobilisation purposes and control of the Reserve men and Landwehr. The battalion districts are in charge of half-pay field officers of the Active Army, each with an adjutant, and a sergeant-major is allotted to each company district, of which, however, a Landwehr officer is nominally in charge. The Landwehr district staffs are responsible for the lists of the various classes of furloughed men in their districts, *i.e.*, men of the Reserve, Landwehr, and Ersatz Reserve, men on furlough, etc. They also keep special lists of all men liable to be called out for service, so arranged as to facilitate to the utmost the summoning of the men when required. Great care is taken to ensure the correctness of these lists, and with this object all the men are mustered periodically. As there is no separate recruiting staff, the whole brunt of the work in connection with recruiting falls on the staff of the Landwehr districts, assisted by regimental officers temporarily detailed for the purpose, and by civil officers.

The peace distribution of the Standing Army is such that each unit, if not actually located within the Landwehr battalion district from which it draws its recruits, and where its Reserve men reside, is not, at any rate, far remote from it, so that the delay and risk of confusion consequent on the calling up of the Reserves on mobilisation, are minimised. Each brigade, division, and army corps takes the field with the same commander and staff with whom it serves in peace; each unit is made up to war strength by the recall to the colours of men who received their training with it during the period of their colour service, and who know their officers and comrades; all the *matériel* required to put the army corps in a state to take the field is stored within the army corps district; and all the arrangements for mobilisation are under the control of the army corps commander, the details regarding them being fully worked out in time of peace, and everybody concerned being thoroughly acquainted with them. Hence, when the order issues to mobilise, there is no friction, no confusion, no ordering and counter-ordering, no asking for instructions, and no unnecessary delay. In 1870 the order to mobilise was issued on the night of the 15th-16th June, and on the 23rd the whole Army was in readiness to move.

The forces at the disposal of the German Empire for war may be classed in three divisions:—

1. The Active (Standing) Army, with its Reserve.
2. The second line troops (Landwehr).
3. The general levy (Landsturm).

The Active Army is recruited in the manner already described. The period of service is seven years, of which in the cavalry and horse artillery three years are passed with the colours, and in the other arms two years. Previous to the Army Bill of 1893 the colour service was, for all arms, three years. The effect exercised by this alteration in the period of colour service as regards the Reserve has been indicated at page 1071. The increase from this cause alone would eventually amount to fully three-fourths of the original strength of the Reserve. Reservists are liable to two trainings, each of eight weeks.

Service in the Ersatz Reserve lasts for twelve years, and the men are liable to three trainings of ten, six, and four weeks, respectively. Only a limited number are trained, about 19,000 annually going through the first training of ten weeks.

The second line troops consist of the two bans of the Landwehr. The first ban consists of men who have completed their service in the Active Army, and the period of service is five years (four for cavalry and horse artillery). They are liable to two trainings of one to two weeks. The second ban comprises the men who have passed through the first ban and also those who have served in the Ersatz Reserve. They are liable to no trainings. Service continues till 31st March of the year in which the thirty-ninth year of age is completed. Men of the Landwehr are liable to serve abroad and to reinforce the Active Army.

The Landsturm comprises all men liable to military service who do not belong to the Army or Navy, between the ages of seventeen and forty-five years. It is divided into two bans. To the first ban belong all men between seventeen and thirty-nine years of age; to the second belong all others. They are not liable to any trainings in peace-time nor to serve abroad. The force exists merely for defence against invasion, and can only be embodied in case of great emergency.

From the above, it is seen that the Ersatz Reserve comprises a proportion of partially-trained men, that the members of the first ban of the Landwehr are thoroughly trained, and that a large proportion of the second ban of the Landsturm are trained, the first ban being the only category in which there are no trained men. After the year 1912, when the Army will have reached its full development under the new law, Germany will have the following troops at her disposal for war beyond the frontiers<sup>1</sup> :—

*a. Fully trained men—*

Standing Army and Reserve (age 21 to 28)	-	1,350,000
Landwehr, 1st ban (age 28 to 33)	- - -	930,100
„ 2nd ban (age 33 to 39)	- - -	935,961
Total trained men	- - -	3,216,061

*b. Partly trained men—*

Ersatz Reserve (age 21 to 33)	- - -	174,800
Landwehr, 2nd ban (age 33 to 39)	- - -	71,134
Total partly trained men	- - -	245,934
Grand total	- - -	3,461,995

The cost of this vast force is, as we have seen, represented in the Budget by a sum of about 23½ millions sterling.

<sup>1</sup> It is assumed that the annual contingent is 250,000, that 19,000 of the Ersatz Reserve are trained annually, and that the waste is 3 per cent. per annum. Men under one year's service in the Active Army not counted.



## III.—THE TWO SYSTEMS COMPARED.

It has been already observed that the wonderful rapidity and success with which the Prussians prosecuted the war of 1866, following upon our own experiences in the Crimea, aroused us to the necessity of re-organising the Army on a modern basis. It was abundantly proved that, however fine our regiments might be on first taking the field, the system—or rather want of system—by which the waste of war was replenished by drafts of imperfectly-trained and immature youths was at once costly, unreliable, and cruel; that it was impossible to maintain an army in the field in an efficient state, and that its efficiency must diminish in proportion to the duration of the operations. It was, moreover, evident that the improvements which were being made in firearms—necessitating a higher training, not only for the effective use of the latter, but also for the development of the individual intelligence and resource required by the mode of fighting which they demanded—would render it more than ever essential that the Army should have a sufficient Reserve, thoroughly trained, wherewith to replace the casualties of war. Happily those in authority at the time, despite the general opposition of the Service, possessed the discrimination and firmness to recognise and pursue the proper course. Long service was finally abolished, and a system of so-called short service—really a compromise between the two—was adopted. Hitherto enlistment had been for various lengthened terms, and at some periods for life, recruits being only occasionally enlisted for short service at times when the strain of war necessitated the raising of large numbers which were not obtainable under the conditions of long service.

But the application of the German principle of colour service, in its entirety, to our Army was impossible. This principle is, as has been seen, to regulate the period of service by the time which is required to impart to the soldier the training necessary to render him efficient for war; and, as soon as he is thoroughly instructed, to pass him into the Reserve, filling his place with a fresh recruit. The German Standing Army is, in fact, a vast school of instruction, and it forms the nucleus only of the field army, which is completed by recalling to the colours a sufficient number of those who, having been taught in the school, have passed into the Reserve. Our Army, unlike that of Germany, is required to garrison and protect vast Colonial possessions, and it is essentially, above all else, a Colonial Army. The annual return of the Army shows that, during the year 1895, more than one-half the Army was, on the average, located abroad. The whole of this force in the Colonies and in India has to be maintained at war strength, and the period of service of the men composing it has necessarily to be so regulated that their relief may not, owing to its frequency, involve excessive expense. Hence it is evident that our Standing Army can only in a very modified degree be a training school, in the German sense, for soldiers. It was originally proposed to fix the periods of service at six years with the colours and six years in the Reserve; but, in view of all the considerations involved, it has since been determined at seven and five years respectively, and

men who are abroad at the time their colour service expires are detained till they complete eight years, their service in the Reserve being relatively curtailed. Occasionally, owing to dearth of recruits and for other reasons, it is necessary to induce men, by offering bounties, to prolong their service beyond eight years.

It is clear that, under such conditions, the Reserve cannot attain to any great development, and that its strength, as compared with that of the Standing Army, must be relatively small. Its numbers, moreover, fluctuate continually, an abnormally large or small number of enlistments at one time resulting in a corresponding number of transfers to the Reserve seven years later. It reached its fullest development at the beginning of 1895, when its strength amounted to 82,804. At the beginning of the present year it numbered 78,057 (enrolled strength), or almost exactly one-third of the effective strength of the Standing Army at the time, which numbered 217,063. It is, however, intended to give greater stability to the strength of the Reserve, and to maintain it about 80,000, by re-opening enlistment in Class D (the "Supplemental Reserve"), in which men who have completed the period of their original enlistment re-engage for a further term of four years.

Now, if the numbers required to mobilise the home Army be considered—*i.e.*, to replace men who, from immaturity and other causes are unfit for active service, and to bring the units up to war strength—it will appear that the greater part of the effective strength of the Army Reserve would be absorbed, leaving but little margin for the replacement of immediate casualties; that, in short, the Reserve, while placing our Army in a far better condition than that of 1854, is still quite inadequate for the requirements of a great war; especially as, under present conditions, operations are likely to be prosecuted with much greater rapidity than in former days, so that there will be no time for the development of latent resources, and military power which cannot be put forth immediately will probably never come into operation at all. This difficulty is, however, inseparable from our system of voluntary enlistment. Even were the existing method of garrisoning our foreign possessions abandoned, and a separate army constituted for service abroad, the Reserve would not, as far as can be judged, be appreciably strengthened, while the efficiency of the Army as a whole would be impaired. In fact, the voluntary system is at present strained to the utmost, and the number of recruits required to maintain the establishment of the Standing Army with a reduced term of colour service would not, at least at the present rate of pay, be forthcoming. This conclusion is sufficiently established by the fact that, of the recruits enlisted during the last five years, 26 per cent. were not up to the regulation standards.<sup>1</sup>

We could not, therefore, by any further modifications in our existing system and organisation, hope to develop an Army at all comparable, as regards numbers, with that of Germany or the other Powers who have

<sup>1</sup> Last year, when an exceptionally small number of recruits were required, the percentage of "special enlistments" was 19.9.

based their systems on obligatory service. Nor did our Army reformers ever intend that we should. Our military system, like that of Continental Powers, is the natural development of our requirements. Had it been determined to introduce compulsory service, and had the nation been disposed to acquiesce in its imposition, our Army would have attained a growth far beyond our needs as we have hitherto been content to define them. On the other hand, we may congratulate ourselves on the success with which such features of the Continental system as are applicable to our Army have been adapted to it. The object we set ourselves was that we should, in view of a foreign expedition, be able to place two army corps and a cavalry division in the field, and this not with the idea of entering alone into a contest with any great Power, but in order that we might be in a position to safeguard and uphold the interests and prestige of the Empire in every quarter of the globe; or to take a minor part, with allied Powers, in any great campaign in which our interests should be seriously involved. And this object has been attained. So far as the defence of the kingdom is concerned, we have been satisfied with the assumption that an invasion is unlikely to take place at a time when we are engaged in a foreign war, and that our existing forces, regular and auxiliary, will be sufficient, with suitable organisation, for all requirements of home defence.

Another feature of the 1866 campaign which attracted special attention in England, as elsewhere, was the rapidity with which the operation of mobilising the field army was effected by Germany. This depended essentially on the system of territorial organisation which has already been briefly described, and which is a natural characteristic of the compulsory system on which it is dependent for its full development. Obviously this was another thing deserving of imitation, but its complete application to our Army was impossible in view of the requirements of our foreign possessions and the necessity for all regiments to take their tour of service abroad. So far as the question of mobilisation is concerned, we have adjusted the difficulty in what may be regarded as a satisfactory manner, by detailing the units which form the garrisons of certain fixed stations for mobilisation, and by storing the equipment at points where it will be readily accessible in the event of mobilisation either for home defence or for a foreign expedition. Other reforms, also, were suggested by the German territorial system. The old "depôt battalions," a wasteful and clumsy device, were abolished, and double battalion regiments were created, first by the linking together, and subsequently by the complete amalgamation, of pairs of battalions, one of which, at home, should act as a feeder for the others abroad. It was also sought to impart a territorial character to the newly-formed regiments by assigning to each a definite recruiting area whence it would draw its recruits, and by naming it after the district so allotted. It was expected that this measure would result in making the Army more popular and in stimulating recruiting. If it were possible to maintain regiments at their full establishment by recruits drawn from their proper districts, this scheme would obviously have resulted in great advantage. Results have shown, however, that this is not possible.

It appears from the report on recruiting,<sup>1</sup> that at the end of last year one territorial regiment had in the ranks less than 300 men belonging to the territorial district, seven regiments had less than 400, five less than 500, six less than 600, five less than 700, seven less than 800, and four less than 900; in other words, thirty-five regiments out of sixty-six (the Cameron Highlanders not being taken into account) have less than half their establishment recruited from their territorial districts. With voluntary enlistment it could hardly be expected to be otherwise.

A matter of equal importance with the question of the creation of a Reserve, and one which is closely connected with the merits of the voluntary system, is the problem of organising the various forces at our disposal with a view to repelling an invasion of the kingdom. The sense of security engendered by our insular position, and the immunity from invasion which we have enjoyed since the Norman Conquest, have caused the people generally, in times of peace, to ignore, or even ridicule, the possibility of a hostile landing being effected on our shores. Nevertheless the panic of invasion has seized upon the nation at different epochs of our history, and given rise to spasmodic efforts to strengthen our military forces. The re-organisation of the Militia in 1757, the Volunteer movement at the beginning of the present century, and its revival in 1859, which have been noticed in the first part of this paper, may be quoted as instances. In recent years, again, the practical demonstration of the enormously increased rapidity with which the mobilisation of troops, and their transport by land, can be effected owing to the inventions of modern science and their application to the means of locomotion, has awakened a general sense of our comparative insecurity of a more enduring kind than had been experienced in former years. Similar causes have, moreover, greatly facilitated sea-transport, and the operations of embarking and disembarking troops and war *matériel*, and have, therefore, largely discounted the value of our insular position. No doubt our fleet will maintain, as it always has maintained, our supremacy at sea, but in time of war our ships would have other work to do than the patrolling of the Channel and the blockading of ports where an invading force might embark; and should we lose the command of the Channel but for a day or two, a sufficient opportunity would be given for an invading army to effect the passage. It is not within the scope of this essay to discuss the possibilities of invasion. It is not, however, beside our purpose to point out that one source from which we might have, derived a negative kind of comfort has been definitely cut off, namely, that if an enemy should contrive to elude our fleet and defeat our field army, he would still, along with ourselves, be reduced to the necessity of making terms, in the course of a couple of weeks, by the want of food supplies in the country. A statement made in Parliament three years ago shows that, at the least favourable period of the year, there are sufficient supplies to support our population and an invading army for some three

<sup>1</sup> Appendix A of the report.

months at least.<sup>1</sup> The possibility of a hostile occupation of the kingdom for such a period is certainly a serious consideration. The efficiency of our various forces, and the arrangements for their employment in the event of an invasion, are, therefore, questions of the first importance.

Glancing at the territorial distribution of the German Army, we observe that four army corps are ranged along the eastern frontier and five along the western from the North Sea to Switzerland; while the various units composing these corps are disposed in the most advantageous manner with a view to the parts they would have to play on an outbreak of hostilities. Thus the cavalry divisions are distributed with a view to covering the general mobilisation and to harassing that of the enemy,<sup>2</sup> and they are kept always in readiness to move at a few hours' notice. The few forts and fortresses on which the Germans care to spend money have each its proper garrison, which would be relieved by troops of the second line within a few days after the receipt of the order for mobilisation.

Turning now to the distribution of our available forces, it is at once apparent that other considerations than those of the requirements of the military situation have been paramount. The general principle of their employment is that the irregular forces should be charged with the defence of fortresses and entrenched positions, where high mobility and cohesion are of less importance than in the field, the Regular Army being thus set free to form a field army, which is, again, to be supported by such irregular troops as are not required for sedentary duties. But the actual distribution of the troops is essentially a paper scheme. The garrisons of our coast fortresses are to be composed, as far as possible, of Militia and Volunteer units located in their neighbourhood; but their requirements are thus only partially met, and they have to be completed by the addition of units brought by rail from a greater or less distance. This is notably the case as regards the Militia artillery, which happens to be distributed chiefly in the northern part of the country, far remote from the places where it is required for purposes of war.<sup>3</sup> The difficulties of mobilisation and concentration are thus greatly enhanced, and the chances of delay and confusion occurring are increased. These disadvantages are clearly irremediable under the voluntary system, for the location of our auxiliary forces is governed by conditions over which we have no control. The same observation applies with regard to the deficiency of the artillery force required to place our available irregular battalions in the field in

<sup>1</sup> See Hansard's report of the debate in the House of Lords on the 19th June, 1893. Lord Playfair showed that in September there are 14,500,000 quarters of corn and flour available, or some 7½ months' supply; in March, 10,300,000 quarters, or 4½ months' supply; and in June, 8,200,000 quarters, or 3½ months' supply. These quantities included supplies at sea, but near our ports, which might, or might not, become available in case of a hostile occupation.

<sup>2</sup> The only apparent exception to this is the case of the cavalry division of the 1st Army Corps, which is affected by other considerations, namely the character of the country bordering the Polish frontier in that neighbourhood.

<sup>3</sup> See Appendix A.



organised bodies. The distribution and numbers of these forces depend on the facilities which exist for recruiting them in particular districts or for recruiting them at all.

Closely allied to this subject is the question of the efficiency of our auxiliary forces—one which is necessarily approached with diffidence, for fear of incurring the charge of depreciating the value of the services which the patriotism of our citizens has led them to give freely and ungrudgingly, without the prospect of any immediate personal return. It cannot, however, be ignored in discussing the subject of this essay. As regards the Militia—which constitutes our second line troops—it is evident that a recruit training, which lasts a couple of months, supplemented by an annual training of three or four weeks, cannot develop very highly-trained soldiers. The Militia is certainly far inferior to the Landwehr, which forms the German second line, and probably not superior to the trained portion of the Ersatz Reserve (forces which cost the State, comparatively speaking, nothing), while the expenditure on the Militia exceeds half a million yearly.

Another consideration which affects the usefulness of the Militia for war is the limited conditions under which its services are at the disposal of the Government. It can be embodied in time of "imminent national danger or great emergency," but cannot be employed beyond the sea except, voluntarily, at the Mediterranean stations. It is thus practically available only in the event of invasion, and cannot, like the German Landwehr, be used to strengthen the Active Army in a foreign war. The Volunteers can be called out in case of threatened invasion, but when we consider the kinds of occupation followed by the majority of members of the force, and the complete dislocation of the business and affairs of the country which would result from their being withdrawn from their civil pursuits, it must be anticipated that the issue of the proclamation for their embodiment would be deferred until the very last moment. Their retention in the field would likewise be beset with the very gravest difficulties; and the hardship to individuals, and the disorganisation of our national institutions which it would entail would considerably enhance the sufferings which must inevitably attend invasion. And how far the discipline which, in peace, is inherent in the nature of the force, would withstand the unaccustomed hardships of a campaign, is matter of conjecture.

Comparing our Militia, again, with the second line troops of the Continental system, we perceive another disadvantage of our system in respect of the age of the men composing the Militia. Under the compulsory system those who, from the vigour and *élan* of youth, are best suited for the requirements of active service, form the field army; those of more mature years composing the troops of the second line, which would be employed on duties of a more or less sedentary nature. Our field army would, on the other hand, include men up to thirty-two years of age; while our second line troops would be chiefly composed of raw youths of about twenty. Moreover, the system under which we entirely

lose the services of men who have been trained in the Army on completion of their Reserve service appears wasteful and extravagant. Here, however, it must be again remembered that our military organisation is primarily directed to the requirements of our Colonial Empire and of minor active operations abroad; and that to call on men of more advanced years, who have generally married and settled down to the pursuits of civil life, to serve in foreign wars, would enormously increase the hardship of military service, and therefore render the voluntary recruitment of the Army impossible. The chance of war being carried into the kingdom is regarded as such a remote contingency that it is not considered worth providing against by incurring the increased expense which would be necessary if we were to retain the services of men who have passed through the Army with a view merely to making them available in the event of an invasion. We prefer to rely on our small Standing Army and Reserve, aided by the Militia and Volunteers, which cost the country comparatively little to maintain. The efficiency of the Volunteers is certainly of a much higher order than might be expected from a consideration of the amount of training fixed for them by regulations, for, owing to the excellent spirit which animates the force generally, members frequently go far beyond regulation requirements as regards the number of drills they attend and the musketry efficiency to which they attain. The difficulty of getting them together in organised bodies for training renders it, however, impossible to impart the kind of instruction which is essential to develop that mobility, cohesion, and discipline in the field, which are necessary to an advanced state of efficiency.

On the whole, viewing the question in the light of our present policy, and of the conditions which have obtained in our past wars, we may regard our military forces as being sufficient for any demands which are likely to be made on them in the immediate future. At any rate no mere modification of our present system would result in any material gain in numbers or general efficiency. In both these respects the voluntary system has probably reached its utmost development. Its defects are such as are essentially inherent in its nature, and cannot be removed. And these defects are much less disadvantageous to us than they would be to a Continental Power. Holding, as we do, the absolute command of the sea, we are practically secure against sudden invasion, whereas we are unlikely to be pressed for time in despatching a foreign expedition. The difficulties which, on account of the absence of a regular territorial organisation, would attend a rapid mobilisation, are therefore the less likely to affect us prejudicially. The smallness of the force at our disposal for operations abroad is to some extent compensated for by the unique power we possess of transporting it with comparative secrecy, and using it to strike a blow in any quarter of the world. The most serious disadvantages entailed by our system are perhaps the want of homogeneity and cohesion in our different forces, which would hamper their employment in the event of an invasion, and the absence of any tactical organisation in peace, on account of which our brigades, divisions, and army corps would, in war, be necessarily composed of a somewhat fortuitous assem-

blage of units, commanded by generals who would be unknown to their troops, and with staffs got together on the spur of the moment.

It is clear, then, that should the necessity arise for any considerable expansion of our military forces, we shall be obliged either to have recourse to such an increase in our military expenditure as will, by the offer of higher rates of pay, induce men to enlist in larger numbers, or else to submit to bear the burden of compulsory service, which other nations have accepted as the only practicable method of maintaining the military strength which their circumstances require. It is unnecessary to consider the feasibility of the former alternative, or the likelihood of its being adopted. It is obvious that neither the one nor the other could be contemplated except under circumstances of great gravity, and it would largely depend on the popular sentiment at the time which course would commend itself to the nation.

It has been said that the principle of compulsory service is opposed to the genius of the English people. The justice of this statement is, however, open to question, except in a limited sense, and in so far as it may be said that the nation is averse to military institutions in any form. The national feeling on the subject has not, fortunately, been yet put to the test. If the Empire were exposed to danger such as menaced the French in 1793, or were we subjected to defeat and a hostile occupation as happened to the Prussians in 1806, there is no reason to suppose that we should be less patriotic than those nations were. Not only was the principle of general liability to serve the foundation of our military system as late as the Restoration, but the Militia continued till the middle of the present century on the same basis; and it still remains as an acknowledged principle of the constitution in the ballot acts for the Militia, which, though in abeyance because not required, have never been repealed. Our so-called prejudice against military institutions dates back to the early ages, when, as we have seen, the people began to resent the attempts which were made on the part of the Crown to oblige our levies to serve in foreign wars in which the nation was in no way interested; and it was accentuated by the maintenance in England and elsewhere of Standing Armies in the service of the Crown—Armies which were largely composed of foreign mercenaries, and which were recognised as a menace to the liberties of the people and to the peace of the country. Moreover, the great wars in which we have been engaged were either essentially dynastic wars, or were, at least to the popular mind, so remotely connected with the safety or interests of the Empire that they did not awaken any deep or lasting military enthusiasm. We have not yet been obliged to take up arms against a foreign Power to maintain our national independence or the integrity of our foreign possessions. The vast development to which the Continental Armies have attained has not hitherto affected us. We are, therefore, content to pay on a liberal scale for the small Army we require, and secure for ourselves the uninterrupted enjoyment of private life, and the tranquil pursuit of our various occupations. It is true, indeed, that our military system is a species of substitution, but not of that mischievous and degrading kind

—the payment of a substitute in order to evade personal liability—which used to be the bane of the French Army and of our own Militia, but the contribution in money, of those who prefer peaceful occupations, towards the pay and maintenance of others who, from taste or other reasons, desire to enter the Army. So long as the requisite military force can be maintained in this manner, and at a cost which we can afford to pay, our system is not only unobjectionable, but advantageous. Putting, for the present, other considerations aside, it is evident that the system of compulsory service must interfere in some degree with the special education and training of young men with a view to the professions or trades which they may elect to follow in order to obtain a livelihood. The existence in England of the system which we have hitherto found best adapted to the conditions of the Empire, cannot be considered a valid reason for asserting that we are not only not a military nation, but are incapable of becoming one. That the English people possess, in an eminent degree, the very finest qualities of a warlike race, is proved by the whole history of the formation of the Empire. Despite our national preference for free institutions, there can be no doubt that, if necessity demanded, we should not only cheerfully accept personal liability to serve, but would vindicate our character by exhibiting a general aptitude for war which no national army has yet shown.

The modern compulsory system has not, in fact, been thought of, much less understood, by the general public. Those who have formed any ideas at all on the subject have started from misconceptions based on the earlier crude systems which have long since undergone radical reformation. A few years ago, at a time when the question of the sufficiency of our Navy was attracting attention, the writer happened to travel in a railway carriage with two business men, of respectable position, who were engaged in discussing a newspaper article on the subject. The conversation drifted from the naval to the military aspect of our position, and he was surprised to find how completely they misunderstood the Continental military system. Their ideas were apparently derived from imperfect notions of the old French conscription, coloured with what they had, as boys, read in story-books about our method of impressment for the Navy, and harrowing pictures were drawn of the hardships to which men of all ages and condition are exposed, in Continental countries, by the liability to be torn away from their families and affairs to be taught the goose-step by exacting drill-sergeants, and to be shocked by the licence and debauchery with which soldiers are proverbially accredited. The real nature of the German system was learnt with a surprise akin to incredulity. Now, although this is an isolated example, it not improbably represents the mental attitude of a large section of the public who have not travelled, or given the subject special consideration. They take little interest in military affairs so long as they know that the money spent on the Army is applied to the maintenance of our garrisons, and to the provision of a force for the exigencies of foreign expeditions.

It is more to be regretted that this kind of ignorance should also affect the manner in which our own Service is regarded by the public.

The profession of arms, instead of being held in esteem as honourable and patriotic, is very generally looked on as unworthy and degrading. No doubt the public feeling has undergone some improvement in this respect in recent years ; but still the young man who enlists is very often regarded as the black sheep of the family. It is true that many join the Army because a restless disposition makes them disinclined to exercise the application which is requisite for success in the more lucrative, and, therefore, more respected, pursuits of civil life, and many more because they have become involved in some trouble at home. This does not, however, preclude their becoming good and steady soldiers, and doing service for their country, which should entitle them to respect and gratitude. The straits to which many of our soldiers are reduced by the difficulty of obtaining civil employment after transfer to the Reserve also tend to bring discredit on the Service. As men who are despised by their fellows often lose their self-respect, so this popular feeling re-acts upon the Army, and neutralises our efforts to raise its tone. The soldier who finds that his friends and relatives think that he has lowered himself by enlisting is deprived of a powerful incentive to good conduct, and too frequently abandons himself to courses which he might otherwise avoid. He is refused admittance to places of amusement of the better class, or relegated to the worse seats, and so encouraged to frequent low haunts, where, at least, he is more favourably received. Even public-houses, which admit the lowest of the civil population, sometimes close their doors upon him. Non-commissioned officers are refused second-class tickets on some of our railway lines. In short, the men whom we put forward to sacrifice, if necessary, their lives for our national safety and interests, are rewarded by being classed among the scum of the population.

All this is especially discreditable to us, for we owe more consideration to our soldiers than any other nation. No other Army is required to undergo the risks and hardships of service in climates such as are our lot, or is called upon to fight so frequently in little wars and expeditions in various quarters of the world. And yet no nation treats its soldiers with such contumely as we do. Old prejudices die hard in England, and this popular feeling regarding the Army is, no doubt, another legacy from the times when military service, being arbitrarily demanded, was resented, and when Standing Armies were composed of hirelings employed to do the pleasure of the Crown. We are slow to recognise that our soldiers are the servants of the nation, and that the period of dynastic wars is no more.

But the voluntary system is also, to some extent, responsible. Services rendered are less prized because they are freely given and paid for. Men who, for money payment, undertake to perform duties which are to others distasteful, are regarded by the latter with some contempt. And in this view our system is bad—bad not only for the Army, but for the nation.

Turning to Germany, we find military service viewed in quite a different aspect. The military servants of the State are held in honour,



and those who are, by reason of unfitness, rejected for the Army, regard it as a personal misfortune. The Army is not only a school for war, but a school for patriotism; and its influence on the nation has certainly not been degrading. The spasmodic burst of patriotism in which our Volunteer movement originated was but partial and superficial. The public generally are apt to regard Volunteering as a sort of harmless mania, and it gratifies them in so far as it engenders a sense of security by supplementing our meagre Regular forces. And yet the selfishness of this attitude is appalling. Why, in time of national peril, should the onus of our country's defence rest on a fraction of the people, whom patriotism impels to make sacrifices which they can afford no better than their fellows? Is not the whole situation shameful to a great nation?

But the fact is, that we are, as a nation, so wrapt up in the security of our position, and in the pursuit of wealth, and the enjoyment of the luxuries which wealth provides, that we do not trouble ourselves about the ethics of the matter. No doubt the attitude of other nations was similar until the stress of circumstances compelled them to bestir themselves.

And it is not only by the development of the national virtues of patriotism and unselfish devotion to the commonweal that a nation benefits by the system of universal service: it also gains by the individual improvement of the people. The German workman who leaves his farm, or his trade, to perform his training in the Army; the student who, for a time, relaxes his studies for the same purpose,—returns afterwards to his work a better man and a better citizen. One of the greatest benefits conferred by a public school or university education—and which is quite apart from the mere storing of the mind with book knowledge, and the training of the intelligence by mathematical and scientific studies—is the subjective influence which is exercised on the character and mind of the individual by every-day contact with his fellows in the classroom and on the playground. The training which the youth of Germany undergo in the Army exercises a very similar influence. The young soldier acquires the ideas and discipline and subjection to authority, habits of industry and method, and the rough angles of his character are smoothed down by association with his fellows, and he learns to estimate his individual worth as compared with others. His intelligence is also sharpened, and he learns self-reliance, self-respect, and resourcefulness. The value of these qualities and acquirements is apt to be lost sight of or underestimated, because military training does not directly impart the knowledge or expertness required for the prosecution of the calling which the young man is to embrace on return to his home; it is none the less, however, because it cannot be accurately assessed. Viewed in this aspect, the military training of Germany, by its influence on the mind and character, without doubt indirectly tends to make the individual a more efficient worker, and a more useful citizen, in any walk of life.

Against these advantages we have to weigh whatever hardship is entailed by young men being taken away from the occupations which, at the age of twenty, they have already begun to pursue. It is the object

of the German system to minimise this hardship. Exemptions or postponements are given in cases where distinct loss or suffering would result from men being taken from their work; men under age are allowed to volunteer so as to enable them to get through their Army service at an earlier age; and persons of superior education and position can enter as one-year volunteers, are exempted from living in barracks, and at the end of their term pass into the Reserve as under-officers or officers, according to their qualifications. The period of colour service is now reduced to a minimum, whereby not only is the strength of the Reserve largely increased, but the burden on the individual is lightened as much as possible. That the burden is not excessive, is shown by the cheerfulness with which the German accepts his liability to serve, and by the esteem in which the Army is generally held. No doubt it was irksome at first, and the tide of emigration may have been swollen by numbers who left the country to evade this liability. So, at least, it has been asserted; but with what justice is doubtful. At any rate, emigration has declined in recent years; and if such statistics are of any value in gauging the unpopularity of military service, they point to an improvement in the public feeling in this respect. The number of emigrants, which reached a maximum of 220,902 in 1881, fell to 120,089 in 1891, and to 40,964 in 1894. Our emigration, with a smaller population, is much greater.<sup>1</sup>

The marriage statistics have also been invoked to demonstrate the evil influence of military obligations in Germany. It is pointed out that as the compulsory system has developed, so have marriages declined. It is dangerous to base conclusions on incomplete statistics, but the only data available are given in Appendix C for what they are worth. It appears that the number of marriages was, in 1872, 1·03 per cent. of the population, and that the percentage fell in 1876 to 0·85, and in the years 1889-93 to 0·79. It may be assumed that the decrease which has taken place is due to the demands of military service preventing young men from attaining an independence enabling them to marry until past the time of life after which marriage is often not contracted at all. Even granting this, it is still open to argument whether this limitation of marriage is to be regarded as a national misfortune. It has not prevented the population from increasing by leaps and bounds. The latter show an increase of 10,000,000, or about 25 per cent., in the past twenty-three years, and the annual increase now averages 465,979. Nor, so far as statistics show, is the decrease in marriages accompanied, as might be expected, by an increase in the number of illegitimate births, for these have fallen since 1889 from 1 per 281 of the population to 1 per 288 in 1893, and reached a lower average in intermediate years.<sup>2</sup> If, then, the effect of compulsory service in this respect has been to prevent the premature contraction of marriage, it seems not unlikely that an advantage may, on the whole, have accrued both to the State and to individuals. The extent to which premature marriage obtains in England among the poorer classes is certainly of no benefit to either.

<sup>1</sup> See Appendix B.

<sup>2</sup> See Appendix C.

And closely allied to this aspect of the subject is the question of the employment of Reserve men. The hardship under which our ex-soldiers suffer in this respect need not be dilated on. It has already been adverted to as affecting the popular opinion regarding the Army, and this opinion again re-acts to the prejudice of the Reserve man when seeking for employment. The whole situation is discreditable to the nation. It does not attract general attention, because, our Reserves being small, only an insignificant portion of the population is affected, which escapes notice in the general struggle for existence. There is also, perhaps, the somewhat unworthy idea that men who have been maintained for seven or eight years at the taxpayers' expense may thereafter be allowed to shift for themselves. So, no doubt, they may; and besides we pay our Reserve men, which the Germans do not do. But the point to which it is desired to draw attention is the disadvantage at which our soldiers are placed on their return to civil life, as compared with those of other nations. They have not only to contend against the bad opinion which is entertained regarding the Army generally, but they enter the race of life handicapped by an extra weight of years, and by the diminished suppleness, mental and moral, which results. For it must not be forgotten that our Army training differs widely from that of other nations. Our men are not trained at high pressure, and when trained they are retained for years at duties which have little influence, if any, in expanding the mind and character. Moreover, during this time they are apt to acquire—especially in our Indian garrisons—habits of indolence which may be most detrimental to their after career. Under the compulsory system all this is different. The great majority of young men<sup>1</sup> are similarly affected, and all start in life under identical conditions, and with the sympathies of the nation in their favour.

But although there is a good deal to be said in favour of universal service, both from the point of view of the State and of individuals, there are also considerations on the other side. As regards individuals, there is an interference with the freedom of the subject, which, even though it could be conclusively proved to redound to his ultimate advantage, would not be justifiable merely in order to produce that advantage. In a free country the liberty of the subject entitles him to pursue his career in the manner he judges most expedient, without being obliged to undergo this or that course of training or instruction, however beneficial it may be. Success or failure follows from the independent volitions and actions of the individual, who is alone responsible for the result. Whether the time our men spend in the Army tends to their advantage or otherwise in the subsequent struggle in civil life, at least they themselves (having enlisted of their own free will) must answer for the consequences. Our responsibility, as a nation, is confined to seeing that the soldier shall, so far as the necessary conditions of our Service will allow, reap the maximum of advantage from his life and training in the Army. Under the obligatory system the State assumes, in this matter, the entire responsibility.

<sup>1</sup> All who pass through the Active Army.

It is also urged against the compulsory system that it imposes undue hardship on those of the middle and upper classes who are called on to serve. This argument is based partly on a false analogy with our Service, and partly on a one-sided view of the general question. No doubt many of the young men who, in our Army, enter the ranks with the view of obtaining a commission, lose some of their delicacy and polish in passing through the ordeal, although to this also there are many notable exceptions. This disadvantage is exemplified in a marked degree in democratic France, where it is against the principles of the nation to allow privileges to persons of superior birth and education, and all classes alike have to share the same barrack-room. That it is not felt in Germany is sufficient proof that it can be avoided. Moreover, if it is admitted that an Army of the requisite strength can only be maintained by making service in it obligatory—and this admission is the basis of all the Continental Armies—it is obviously a very partial view of the principle that would limit the obligation to certain classes of the community. When all are interested in the defence of their country, it is just and reasonable that all alike should share whatever sacrifice may be necessary to attain this object. As has been already observed, military service is not, in Germany, regarded as a hardship or degradation, and the same would be the case in any country similarly circumstanced, whose people were animated by true patriotism.

Again, as regards the State itself, there is under the compulsory system the obvious disadvantage of withdrawing a proportion of the population from productive industries for several years of their life. It has been incorrectly asserted that the State is the poorer by the amount of what would have been the earnings of all these men in civil life. This sum obviously does not even correctly represent the loss to the individuals who are taken for the Army, and it does not necessarily bear any relation to the loss of the State. Money which is paid as wages by an employer to his workmen is merely transferred from one member of the community to others, and its transfer does not affect the general wealth of the community. The loss to individuals may be stated, approximately, as the difference between what they receive as soldiers in pay, food, clothing, lodging, etc., and what they would earn civilly, *plus* whatever loss may result from such difficulty as they may experience in getting re-employment when they leave the colours, and from any decrease of dexterity in the practice of their occupations which may be caused by disuse. The actual loss to the State is much more difficult to estimate<sup>1</sup>—in fact, even an approximation is unattainable. It has, with seeming correctness, been stated to be the amount which the persons called on to serve would otherwise, by being engaged in productive industries, contribute to the wealth of the country. This comes nearer

<sup>1</sup> This bears no necessary relation to the wages of producers, or to the net profit on their wages after deducting the cost of maintenance of the producers. For example, the wages of workmen employed in making a piece of machinery, or a ship, obviously bear no proportion to the contribution to the national wealth which the machinery or the ship represents.

the mark, but it assumes that all those withdrawn would otherwise be producers, and that the productions of the country are diminished in proportion to the number of men withdrawn—assumptions which cannot be admitted without argument. It, moreover, ignores the starting point of the whole question of compulsory service, namely, that the country has to maintain an Army of a certain strength. Keeping this in view, it is evident that the men who compose the Army, whether enlisted voluntarily or taken compulsorily, must equally cease to be producers; and that the loss to the State, whatever it may be, is therefore the same in either case; whereas, in the former case, the State puts itself in competition with the labour market, and consequently has to give out of its revenue higher rates of pay than in the latter case. Under the voluntary system, the State may be said to be, roughly, the loser by the amount of this difference of pay.

If this were all that could be said, the economical side of the question would be simple enough. The statement is not, however, nor could any statement be, strictly accurate. The question is complicated by the fact that there are, in every community, a number of young men who would not, in any case, contribute to the national wealth, or who would only contribute in a limited degree. This number is not meant to include those who follow unproductive avocations. These need hardly be taken into account, for the amount of such employment available would not be materially affected by a change from one system of military service to the other, except in so far as, with compulsory service, there would be a tendency to a rise in wages, which would result in men being drawn from unproductive to productive employments. The persons referred to are those who, from restlessness of character, indolence of disposition, inferior capacity—in fact, the ne'er-do-wells of society—live on their wits if they have any, or on their relations if they have not, and by whom the country is certainly not enriched. Now, such men often, with discipline and training, make excellent soldiers, and in becoming soldiers they cost the country nothing but their pay and maintenance. Under our system a large number are drawn into the Service; under the compulsory service the high pressure at which training is conducted is not calculated to encourage them to volunteer, nor is the pay sufficient to attract them. It is mere chance how many of them are drawn in the annual contingent, and the State clearly loses on account of every individual of productive proclivities who is drawn, while a ne'er-do-well, is available to take his place.

Hence we may state the truth of the matter in general terms thus:—If the Army which a country is obliged to maintain can be kept up to strength by the enlistment, for the most, of ne'er-do-wells, then the voluntary system is the cheaper; but if the Army is of such a size that large numbers of the productive classes have to be drawn into it, then the compulsory system costs considerably less. Our little Army of some 200,000 men, enlisted for a long term of colour service, is maintained by the enlistment of about 30,000 to 40,000 recruits annually,



the majority of whom are of little value as producers. The voluntary system is, therefore, much the cheaper for us. On the other hand, the annual contingent of the German Army absorbs about three-fourths of the entire number of men of military age, and the great majority of these would, if not compelled to serve, engage in productive employment of some sort. If Germany wished to change to the voluntary system, enormous rates of pay would have to be offered to induce these men to enlist, while the country would still lose the fruits of their productive labour to precisely the same extent as under the present system. The increase in the Army Estimates would be met by increased taxation, and money would thus be withdrawn from investments which contribute to the wealth of the country. The compulsory system is, therefore, more economical for Germany and other countries which have to maintain Armies which are relatively large in proportion to their population, and so it would be for us should circumstances compel us to make any considerable increase in the strength of our Army.

Moreover, nearly all the money which we expend on the Reserve and Auxiliary forces is saved under the compulsory system. Deferred pay and reserve pay are unnecessary, and Reservists need be paid only when called out for training, and then at the lower rates allowed for the Standing Army. There is no expenditure on Militia and Volunteers. The cost of recruiting establishments is relatively reduced. All the money which we expend on various details, with a view of making the Service attractive, can be applied to things which promote efficiency.

It has been remarked above that it is incorrect to assume that all the men withdrawn for the Army under the compulsory system would otherwise be producers, and that the productions of a country are diminished in proportion to the number of men withdrawn. This statement, perhaps, requires explanation. As regards the first assumption, it is clear that the non-productive class must be represented, to a greater or less extent, among the men drawn in the annual contingent. The second assumption involves a more difficult question, which can only be touched upon in this essay. From the census taken in Germany in 1882<sup>1</sup> it appears that what may be called the productive classes numbered 39,652,960. In this number the professional classes are included, some of whom may be rightly considered productive and others not, but it does not include a few classes who are productive. At that period the total population numbered 45 millions; it is now 52 millions. We may, therefore, roughly estimate the productive classes at the present time at about 45 millions. This number, however, embraces females and children as well as adult males. If we assume one-half the number to be males and one-third of the latter to be of productive age, which is probably not over the mark, about seven possible producers per 100 are serving in the Army. If the congested state of the labour market be considered, it seems not unreasonable to assume that the withdrawal of 7 per cent. of the productive classes would not appreciably affect the productions of the

<sup>1</sup> Unfortunately I have no statistics of a later date.

country. The effect would be to give the remaining 93 a better chance of continuous employment, and therefore to check emigration, and possibly to cause a slight rise in the price of labour. Such a rise, be it remembered, does not necessarily detract from the wealth of the country.

In the foregoing argument it has been assumed, for the sake of simplicity, that all men are of equal value as producers. Now, the productive energy of an individual does not depend solely on the skill and knowledge he possesses in connection with his particular industry or business. It is to some extent affected by his character, disposition, power of application, punctuality, alertness, general intelligence, and other qualities not directly connected with the former. It is one of the arguments in favour of free education that it tends to develop qualities of this nature, and by so doing to increase the productive energy of those classes who cannot afford to spend money on a general education which does not give a direct return. That, under the compulsory system, training in the Army develops such qualities, and so tends to the advantage of the individual, has been already pointed out. The country also reaps a corresponding benefit, and this not only by the gain of productive energy, but also by the general moral improvement of the people, which renders them more amenable to the principles of law and order. And this Army training is better adapted to the development of the practical qualities required, than a school education which is devoted chiefly to the acquisition of book-learning. Its value as a supplement to the latter must be immense.

Among the fallacies which envelop this question of the cost of compulsory service, one more must be briefly noticed before the subject is dismissed. We are told that under the compulsory system a mobilisation for war involves the complete dislocation of all the business and industries of the country. So, no doubt, it does; but this is not a valid argument against the system in itself. It is but another deduction from an unsound and misleading comparison between our little Army and the Continental Armies. It is so fully refuted by what has been already written, that it would be unnecessary to notice it but for the general acceptance which has been accorded to spurious theories on the subject. If a large Army is necessary, it cannot be obtained without drawing on the industrial classes, whether recruits are got by voluntary enlistment or by lot. A mobilisation must, in either case, throw the affairs of the country out of gear. It is not clear that the compulsory system does not possess an advantage over the other in this respect, for the men required for the Army on mobilisation are drawn from many different classes of the community and from the pursuit of many different forms of industry, while a proportion are left to carry on each kind of work. If it were possible to maintain an Army on the modern scale by voluntary enlistment, the tendency would be to draw only the lower classes—agriculturists, factory hands, miners, labourers, etc.—into the ranks, so that the entire strain of war would fall on a few classes, and some important industries might be seriously affected.

Apart from this aspect of the question, in which it is viewed from

the standpoint of national expediency, it is argued that under the voluntary system the burden of military service is more evenly distributed, because all classes contribute to the cost of maintaining the Army. This is, no doubt, practically correct, and the point is not much affected by the size of the Army; for, whatever might be the number of men required, they would all enter the Service voluntarily, and could not therefore be said to bear any burden. On the contrary, they would be attracted, for their own interests, by the pay offered. The burden of providing the pay required to attract them would fall on all those who might not wish to serve; and its weight would be, practically, proportioned to their means. Not, indeed, quite accurately so, for, as has just been pointed out, the voluntary system attracts into the Army those classes only who work for wages; and, in the case of a large Army, the tendency would therefore be to raise the price of labour, and hence to throw an additional burden on all employers of labour.

The national aspect of the subject has now been considered as fully as the limits of this essay will admit. It has been shown how the national Armies of Continental countries, as distinguished from the old Standing Armies, which were hired by the autocratic rulers of earlier times, have grown, by a natural process, out of the necessities of those countries; and that there is nothing harsh or unjust in the principle of general liability to serve on which they are based, which has, on the contrary, been accepted as the best solution of the great problem of national defence. We have seen that the compulsory system, compared with the voluntary system as exemplified in our Army, exercises a beneficial effect, both on the individuals who serve and on the nation generally. An attempt has been made to dissipate ideas regarding the cost of the former, which the writer believes to be erroneous; but which, from not having been examined, have hitherto met with general acceptance.

And as regards the military aspect of the question, certain general characteristics of the two systems have been established, viz., vast military forces can be developed under the compulsory system, and maintained in time of peace at comparatively small expense; a perfection of territorial organisation, unattainable under the voluntary system, is reached by which recruiting is simplified, and the process of mobilisation can be carried out with the greatest ease, precision, and celerity; a great superiority of the troops of the second line, as compared with our Militia; and a more favourable sentiment regarding the Army, which re-acts on the latter, and, by maintaining a high tone, promotes its general efficiency. Let us now consider the subject more in detail.

We have already seen that the tendency of the voluntary system, whether on a small or large scale, is to attract the lower classes of the community, whereas the compulsory system takes its recruits from all classes. It is easy to understand that the admixture of a proportion of the better classes in the ranks must exercise a good effect on the whole body, both as regards its moral tone and discipline. It also meets a great difficulty under which the voluntary system labours, namely, the provision

of efficient non-commissioned officers for the Active Army and officers for the Reserve. The want of good non-commissioned officers is one which we have felt keenly since the term of colour-service in our Army was reduced. Under the long-service system we had time to train and educate men to the standard required for promotion, while their age and length of service gave them the requisite influence for their position. With a system of genuine short service combined with voluntary enlistment the difficulty of providing good non-commissioned officers would be greatly accentuated. The compulsory system furnishes an ample supply of men who are at once possessed of the necessary intelligence and education, and whose superior social position gives them that influence and authority which is, in our Army, conferred chiefly by length of service. The question of officering the Reserve is one which, owing to the smallness of our Reserve, does not seriously affect us, but with an Army on the Continental scale it would present insuperable difficulties. The Germans have solved it successfully by the expedient, already noticed, of one-year volunteers, which provides a sufficient number of officers to fill junior positions on mobilisation.

On the other hand, it is claimed for the voluntary system, that men who enter the Army from choice, serve more cheerfully, and make better soldiers, than men who are taken irrespective of their tastes and wishes. This is, no doubt, an advantage on the side of voluntary service, even when allowance is made for the fact that many men are led to enlist for other reasons than the taste for a military life, and that many more find out after they join the Army that they have mistaken their career. Still a man may be actuated to fight well by other motives than a taste for fighting, and it cannot be questioned that the feelings which animate national Armies have caused them to fight well. We have, indeed, of recent years, heard a good deal of certain episodes in the great battles of the Franco-German war which we are apt to think not altogether creditable as regards the fighting qualities of the German Army. But in contrasting the behavior of the German troops with that of our own in the hard-fought battles of the past, we must not omit to make due allowance for the altered conditions of modern war. The prolonged strain of an advance under breech-loader fire has never been experienced by our troops. Our great battles were fought at comparatively close quarters, when a volley and a bayonet charge often decided the day. It is quite another thing to suffer heavy losses while yet a thousand yards or more distant from the enemy. To persevere in such a case demands, perhaps, a more enduring courage and a firmer discipline than was required of our troops in the past. It must also be remembered that the conditions to which the troops found themselves exposed on the French battle-fields were new and strange, and that no system of tactics or training had been adopted with a view to meeting them. When in presence of the enemy the old forms were found quite unsuitable, and a general dissolution supervened, which tended to loosen the bonds of discipline, and to awaken a sense of uncertainty which might well make the courage of all but the boldest spirits melt away. It is not, therefore,

just to impugn the fighting qualities of the French and German troops by a false comparison with our own—false because no true analogy exists—nor is it fair to ascribe the conduct in question to an inferiority in an Army maintained by compulsory service as compared with one recruited by voluntary enlistment. It is, in fact, reasonable to suppose that few men love fighting for its own sake, and from an innate love of danger, and that the majority are influenced by the sense of discipline, honour, and devotion to duty; and there is no reason why these feelings should not be at least as strong under the compulsory system as under the other.

There remain a few general considerations which, although not matters of controversy, cannot be passed by without notice. The necessity of making service in the Army popular, and of avoiding anything which might tend to make it unpopular, is easily recognised as one of the disadvantages of our system. Under the compulsory system, the interests of the Service need alone be consulted, without fear of recruiting being prejudicially affected. Not only have our soldiers to be paid liberally, but they must be provided with clothes of attractive cut and fashion, which are laid by when they enter on the practical business of soldiering, and which are rarely worn, even in time of peace, when stationed in countries where they do not meet the eye of a possible recruit.

Frequent reliefs are necessary, so that regiments may not be kept too long in unpopular stations, and that all may have their turn of the more favoured ones, by which not only is expense entailed, but the regularity of training is interfered with. The training of recruits must be carried on by gentle stages, lest it should prove irksome, and so deter others from enlisting; and this easy-going system tends to re-act on all ranks, and make them listless, careless, and impatient of work. The irregularity with which the supply of recruits comes in also makes their training more difficult and tedious. We have, throughout the year, squads of various sizes and in all stages of instruction, and a systematic programme of training is impossible. Nor can the training itself be so efficient as in Continental Armies, where, in the more advanced stages, recruits can be exercised in bodies of sufficient size to make it possible to illustrate, in a practical manner, the tactical principles which are taught theoretically in the barrack-room.

The difficulty of obtaining the requisite numbers of recruits in time of war has been experienced by us on more than one occasion, although there has, at such times, been a tendency for men to come forward more freely than in peace. The creation of a Reserve has placed us in a much better position in this respect, but we are hardly, as already remarked, provided with sufficient trained men to stand the strain of a great campaign. For this we should still be obliged, as in past wars, to rely on the Militia and its recent off-shoot, the Militia Reserve, an expedient which must act prejudicially on the efficiency of that force, not only by diminishing its strength, but by depleting it of its best men, and this at a time when an invasion of the kingdom would be the more likely to be attempted owing to the absence of a large portion of our Regular forces,



and when it is therefore desirable to maintain our garrison troops at their full strength and highest efficiency. The supply of recruits is necessarily at all times fluctuating and uncertain, and it is sometimes necessary, in order that the Army may not fall below its establishment, to resort to the mischievous expedient of offering bounties to induce men to re-engage, which only postpones the evil day, and robs the Reserve of part of its contingent.

The difficulty which Reservists experience in obtaining civil employment has already been noticed, and it would be greatly enhanced were we to call them out for training every year, as is found feasible on the Continent. The result is that the men on whom we rely to form the backbone of our home battalions on mobilisation—the seasoned old soldiers who should give stiffness to the organism—receive no training after they leave the colours, and from disuse become rusty and inefficient. It has been argued that because our soldiers serve with the colours for a much longer period than those of Continental Armies, they retain their efficiency for a longer time than those of the latter without training. It is, no doubt, true that habits and knowledge which have been acquired and exercised during seven or eight years are more enduring than when only a couple of years have been devoted to their acquisition. Still the fact remains that our Reserve is not so efficient as it might be, and that the men composing it deteriorate in proportion to the time which may have elapsed since they left the colours.

The same difficulty would beset us in the event of a mobilisation for war becoming necessary. There is always the danger that Reservists who have succeeded in obtaining employment may not, if taken away from their work, be re-instated by their employers when the need for their military services has passed. In this respect the hardships inflicted by calling out our Reserves is certainly greater than on the Continent, and the cause of this is, again, the lack of patriotic sentiments, and of public interest in the Army. Our predominant feeling, as a nation, in all that concerns our private affairs in relation with others, is selfishness. The nations of the Continent live in momentary danger from which they are protected by their Armies, and the service rendered is so plain that it cannot but excite some gratitude. We, on the other hand, enjoy the security which our sea frontier affords, and give ourselves up to the pursuit of wealth, unconscious of the real, though indirect, influence which the Army exerts on the measure of our success.

#### IV.—THE ADVANTAGES AND DISADVANTAGES OF THE COMPULSORY SYSTEM, WITH REFERENCE TO THE BRITISH ARMY.

Hitherto the subject has been regarded only in its general aspect, and it has been sought to limit comparisons between the two military systems to such general characteristics as are inherent in the nature of each, in order to avoid the false notions and conclusions which might be derived from a comparison between the Continental system and that particular development of the voluntary system which our Army presents. The German Army has, indeed, been more especially referred to in the

foregoing pages, for it is impossible, nor is it necessary, to discuss the special features of all the various Armies in this paper: all are organised on similar lines; and the German Army, although in every respect the most perfect exponent of the compulsory system, is not such a special development of it as to vitiate the general deductions which have been derived from a study of its main features.

Some of the imperfections and weaknesses of our military organisations have also been indicated, and reasons have been given for the belief that, without a disproportionate increase in expenditure, it does not admit of any great expansion of the forces which we have at present at our disposal. The practicability of applying the compulsory service to our Army is, therefore, a question of especial interest in view of the possibility that the course of events may hereafter compel us to increase our forces to an extent which would exceed the capabilities of the voluntary system.

We are confronted, on the threshold of the matter, by the original difficulty which thwarted our Army reformers in introducing a system of short service, and with which they were finally forced to compromise, namely, the requirements of our possessions abroad. The application of the obligatory system to the recruitment of troops which are required to serve in all quarters of the Empire is clearly impossible, for two reasons: first, because the hardship of the system increases out of all proportion with the time men are kept from the pursuits of civil life, and they cannot be justly detained for a longer period than is necessary to make them efficient soldiers—whereas it is essential not only that our Army abroad should consist of none but thoroughly trained men, but also that the period of service should be such that it may not entail the expense of frequent reliefs; secondly, because men cannot be compelled, in time of peace, to serve in climates such as our troops are exposed to. These principles are generally admitted. It, therefore, follows that, if compulsory service were adopted at all, it could only be applied to that portion of our Army which is quartered in the British Isles, and that the troops required for service abroad must form a separate force, recruited by voluntary enlistment.

And here, again, we are met by all the objections which have been urged against the creation of a local Army for India, or a colonial Army for general service abroad, and which have been accepted as conclusive under the present conditions of our military requirements. As, however, there can be no other solution of the difficulty, it is necessary to give the matter some further consideration on the assumption that the home Army would be maintained on the compulsory system.

In doing so it must be borne in mind that the introduction of this system could only be justified by absolute necessity. With us, as with other nations, it must be the natural development of the military resources of the nation, accepted, not only by experts, but by the people, as the only practicable means of maintaining the stability of the Empire. Viewed in this light, many of the objections alluded to lose relatively much of their strength, and may be neglected; while others are capable

of being met, in a manner more or less satisfactory, by suitable organisation.

The chief objections may be summarised as follows<sup>1</sup>:—

The difficulty of inducing men to enlist for purely foreign service.

The advantages presented by India as a training-ground would be lost to the home Army.

The colonial Army would deteriorate in discipline and general efficiency.

The home Army would degenerate into a sort of Militia.

Now these objections group themselves into two general questions :

1. The possibility of maintaining the colonial Army at all by voluntary enlistment.
2. The difficulty of preserving the efficiency of the Army generally. It will be most convenient to consider them under these heads.

As regards the first question. At the time when the creation of a local Army for India was discussed it was assumed that it should be organised on the principle of long service. Some of the objections to the project—such as the physical and moral deterioration of the men—were based on this assumption, and they are certainly strong enough to preclude the idea of returning to the long-service system for the colonial Army. After all that has been written on the subject it is unnecessary to do more than assume that the period of colour service would be fixed at a term not exceeding eight years. Assuming that this is granted, let us see what would be the annual number of recruits required. Taking the average strength of the Army abroad during 1895 as a guide (*viz.*, 104,000<sup>2</sup> in round numbers), the period of colour service at eight years and the annual waste by death and invaliding at 4 per cent., the average number of recruits required would be, roughly, 15,000, or 43·6 per cent. of the average number enlisted during the past five years (1891-5).

Whether this number of recruits would be obtainable or not under the altered conditions, and at the present rates of pay, is mere matter of conjecture. There are, however, certain abstract considerations bearing on the question which may be noticed. Unfortunately there are no means of knowing to what extent different motives influence men who enlist. Some are actuated by the desire to knock about for a few years before settling down; some, from innate indolence of disposition, lack the energy to persevere in civil life, and are attracted by the comparative ease, combined with certainty of employment, which the Army offers; some few possess a natural inclination for a soldier's life; some are driven into the Army because there is something affecting their character which prevents their obtaining employment elsewhere, or because they

<sup>1</sup> It is impossible, nor is it necessary, to review in this essay all the objections in detail. For a statement of them I must refer to the essays published in Vol. XXIV. of the JOURNAL. I only deal here with such points as, by the possibility of their exercising a prejudicial effect on the efficiency of the Army, are entitled to be weighed against the national necessity assumed to exist.

<sup>2</sup> This is an approximation arrived at from the Annual Return. It is, of course, exclusive of officers and colonial corps.

have got into some trouble at home; others because they are jostled out of the struggle for work in an over-crowded labour market. Now, it seems likely that many of those embraced in the first four categories, to which probably the great majority of our recruits belong, would continue to enlist in the colonial Army, though the number would be affected by a proportion of them being drawn in the contingent for the home Army. Some would, no doubt, be induced to embrace civil employment by the greater ease in obtaining it which would be caused by the withdrawal from the labour market of a number of men for the annual contingent, and by the rise in the price of labour which might result. The degree of this inducement would be affected by the strength at which it might be necessary to maintain the home Army. As regards the last category, it may be safely assumed that, under the altered conditions, they would all obtain civil employment.

To what extent the supply of recruits would be affected by the consideration that they would have to pass the whole of their service abroad, is equally indeterminate. As, however, the great majority of those who enlist at present serve the greater part of their time abroad, the conditions would not be very materially changed.

On the other hand, it is likely that one cause which may, at present, tend to prejudice recruiting, namely, the difficulty which men experience in obtaining employment after they leave the colours, would be to some extent modified. That this would be so is probable, both on account of the considerations adduced on page 1087 and the extent to which competition in the labour market would be diminished, and also because the men of the colonial Army would not have to be retained so long in the Reserve as men of the home Army,<sup>1</sup> for which reason employers would run less risk of their being withdrawn for military service. It may be objected to the last statement that as our wars are nearly all minor wars for which the home Army would not be mobilised, the colonial Army Reserve would run equal or greater risk of being called out, despite the shorter term for which the men would be retained. But it must be borne in mind that the colonial Army would be maintained at war strength, and that it would, as at present, be capable of meeting the requirements of our ordinary expeditions, which occur chiefly in India, without any call being made on its Reserve. Moreover, the adoption of compulsory service presupposes that present conditions would have so changed as to render us much more liable to become involved in hostilities with one or more of the great military Powers, and a general mobilisation for war would therefore be a much more likely contingency than it is at present.

Unfortunately, there is no practical experience to guide us to a conclusion regarding this question. The only country which maintains a Colonial Army of any size, concurrently with a Home Army recruited by compulsory service, is France; and her conditions are so different from

<sup>1</sup> Two years would probably suffice for all eventualities. This would give an approximate strength of 21,000, allowing for a wastage of 3 per cent. per annum.

those of the British Empire that her experience can be of no value to us. The French Colonial Army numbers somewhat less than one fourth of the forces which we have to maintain abroad, yet the greatest difficulty is experienced in keeping it up to strength. It has frequently, in recent years, fallen several thousands below establishment, and this despite the many expedients which have been resorted to in order to fill the ranks, including drafts on the annual contingents and from the Home Army, and the enlistment of criminals, and of youths who, from immaturity, are unfit for foreign service. It must, however, be remembered that we can afford to attract recruits by the offer of higher rates of pay than France can give, and that service in our Colonies presents greater attractions than the French colonial service. Several of our Colonies are favoured with healthy and pleasant climates, and our foreign service offers, on the whole, an agreeable variety, as compared with the monotony of ordinary garrison life. India, in compensation for a bad climate, presents special attractions to young men who desire to see the world, and the soldier's life there is far from disagreeable. The French Colonies, on the other hand, are small and scattered, and they are, for the most part, either unhealthy or inexpressibly dull. The average Frenchman has, moreover, probably less inclination to roam than the average Englishman, and certainly endures what he regards as banishment with less equanimity than the latter. The strain of compulsory service is also much more severely felt than it need ever be in England, under any conceivable circumstances; and as the population of France is standing still, while that of other nations increases rapidly, it is likely to become still, heavier in the future. Few young men of military age now escape being drafted into the annual contingent; military service is undoubtedly tending to become unpopular, and the young man who draws a "lucky number" is unlikely to subject himself voluntarily to the hardships of the colonial service. Moreover, the short period for which men serve in the Colonial Army necessitates an annual supply of recruits but little short of what we should require if the duration of colour service were fixed at eight years.

To pass now to the second class of objections. That India is of great value as a training-ground for our officers, especially those in the higher positions, cannot be disputed. Those who are well acquainted with service in India will, however, probably admit that its value in this respect diminishes with the rank of those concerned. As regards the private soldier, what does this Indian training mean? He learns to bear "knocking about," to execute prolonged marches,<sup>1</sup> to pitch and strike camp, to load baggage, etc. All this undoubtedly tends to increase his efficiency, but it does not take long to learn, and the greater part of it could be taught without sending men to India to learn it. He also learns to do nothing for himself that he can make others do for him. The various fatigues, the barrack-cleaning, cooking, all the details which keep men occupied at home, are in India seen to by natives. Hence habits of indolence are apt to be contracted which do

<sup>1</sup> Marches which last some time. The distance covered daily is generally insignificant.



not tend to efficiency, nor perhaps to good conduct, for men have more leisure than they know what to do with. That this is so is substantiated by the fact that as a rule men of the mounted branches are better behaved than those of infantry regiments, whereas the amount of "crime" of the latter is sensibly affected by the extent to which the officers interest themselves in promoting amusements for the men. No doubt India offers superior facilities as regards the special training of cavalry and artillery, and field firing and artillery practice—which are beset with great difficulties at home—can be executed in the neighbourhood of most Indian stations. On the other hand, the manœuvre ground is, in almost every station, quite unsuited for the war training of infantry. There is no doubt that all this tended to cause the deterioration, in discipline and efficiency, of the old local regiments; and in those days the soldier had, certainly, a much easier time than now.

After all, the tone and discipline of a regiment depend to a very great extent on its officers and non-commissioned officers. Good men, it is true, yield good non-commissioned officers, so that when the one class is good it is reasonable to expect that the other will be good also, and hence it is difficult to differentiate between the influence exercised by each on the tone of the regiment. Still, the truth of the original statement will probably be admitted by those who have experienced what it means. *Esprit de corps*, which is based on the traditions of the past, is also a very potent factor in regimental efficiency, and the importance of preserving it must be kept in view in any scheme of Army re-organization.

It seems, therefore, that the second and third objections would be, to a very great extent, obviated by making the colonial Army separate from the home Army only as regards the men, moving officers freely from the one to the other, and drawing a proportion of the non-commissioned officers for the home Army from the colonial Army. As the number of units at home would certainly be greater than those abroad, there might be difficulty in giving every officer a tour of Indian service, but all officers without war experience might be required to have a certain term of Indian service to their credit as a necessary qualification for the general staff, and for regimental and higher commands. Officers would be moved to and fro on promotion, and volunteering for India, and exchanges, might be permitted, subject to the interests of the Service.

As regards non-commissioned officers, the experience they would gain abroad would be of great advantage to the home Army. They should be allowed, under a system of selection, to extend their service for pension. The tendency of this scheme would be to stimulate recruiting for the colonial Army, and to attract men with a taste for military work, for non-commissioned rank would be a prize.

Moreover, the conditions which led to the deterioration of local regiments in India, about which so much has been written, have undergone a vast change since the Mutiny. The improvement of the communications has brought India into much closer touch with home,

and the sense of banishment from which men serving in India used to suffer in old days has been much mitigated, if, indeed, it can be said to exist at all. Life in India is also far different from what it used to be. The peculiar habits and customs of our predecessors, with which we are still very generally accredited by people at home who are ignorant of the change which has taken place in society, have long since disappeared, and, as far as the difference of climate permits, we now live and dress and behave in India precisely as we do at home. In former times our officers and civilians practically made their home in India, and their ties with the mother-country were loosened. Now they go home every three or four years, and by this constant moving to and fro of its components the whole fabric of society is renovated, and any deterioration is prevented.

The military system has also been reformed. There are now inspectors-general of cavalry and artillery, and staff officers whose duty it is to supervise the various special branches of training; our general officers are of a different stamp from those of former days; our regiments and batteries are carefully inspected, and every item of training, discipline, and interior economy is minutely attended to. With a careful selection of officers for the higher appointments, and a proper system of officering the colonial Army, combined with movements of whole units in relief between India and the different Colonies, is it reasonable to suppose that efficiency would suffer any serious deterioration?

All this was lost sight of in discussing the problem of a local Army for India. The most cogent arguments were based on what had been said or written some thirty years before, and the fact that most of the conditions which really affected the question had totally changed since then was ignored.

It is not to be supposed that the creation of a colonial Army is being advocated. There would be nothing gained by upsetting the existing organisation unless the change would promote efficiency. The question which concerns us at present is whether, should circumstances render the adoption of compulsory service inevitable, the organisation of a colonial Army, which would be its necessary accompaniment, would, or would not, entail the risk of any serious deterioration of our forces abroad.

The fourth, and last, objection hardly requires notice. The conditions which could alone force us to adopt compulsory service would effectually prevent the home Army from being allowed to become inefficient.

There is yet another difficulty which would be encountered in applying the compulsory system to our Army. The sketch which has been given of the German territorial organisation shows what great advantages, from the military point of view, are gained by a complete localisation of the various units. The individuals who compose the latter are also greatly benefited, and military service is rendered less irksome, for all the men serving are quartered near their homes and are enabled to keep touch with their friends, and the inconvenience of long journeys to and fro is avoided. The difficulty alluded to is that which is experienced by Germany with respect to Elsass-Lothringen, and by Russia with respect to Poland—namely, the disposal of the contingent

drawn from a population whose loyalty to the Empire cannot be relied on. It is met in Germany by dispersing the contingent among the army corps quartered in other parts of the country, and principally among the Guard Corps, the provinces in question being occupied by troops recruited from elsewhere. The uniformity of the organisation is thus interfered with, and the arrangements for recruiting and mobilisation are complicated, but it is the only possible solution. We should experience a similar difficulty with regard to Ireland, and it would be accentuated by the break in the communications caused by the Channel. After all, it would not be so great, so far as mobilisation arrangements are concerned, as that which is involved by our present scheme for the employment of the Irish Militia, and for garrisoning Ireland with English and Scotch Militia on a mobilisation of the Regular Army. This scheme entails the transfer of twenty-five Irish Militia battalions and eight batteries to English garrisons, and of eight English and Scotch battalions to Ireland. It is evident that these moves and counter-moves, which are unavoidable under our present military system, will add greatly to the strain on our means of transport by sea and land at a time when they will be fully employed in connection with the operations of mobilisation and concentration.

To make the discussion of the subject of this essay complete, it is necessary to consider what advantages we should gain by the adoption of the compulsory system, with respect to the military force which could be maintained, and its comparative cost. It would be impossible in the space available to attain any definite conclusion on these points. The organisation would have to be worked out in detail, accurate statistics which are not available would be required, and an elaborate calculation would be involved. Nor is it necessary for the purpose of this essay, which aims only at the establishment of general conclusions regarding the advantages and disadvantages of the system, and which can deal with the question of its application to our Army only as a remote, if possible, contingency. A cursory consideration of the matter may, however, help us to form some general ideas on these points.

A reference to Appendix D, which gives certain data in connection with the population of the United Kingdom, will show that the number of young men who annually attain twenty years of age may be taken approximately at 235,000. Allowing a margin for those who might be unfit for service on account of physical and other reasons, it may be assumed that from 180,000 to 200,000 would be available for the annual contingent, and this may be taken as a basis for estimating the maximum military force which the population of the British Isles would be capable of maintaining. To draft the whole of these men into the Standing Army would, however, be an extreme measure, and it may for our present purpose be taken for granted that about one-half—90,000 to 100,000—would be sufficient. This, with two years' colour service,<sup>1</sup> would give a

<sup>1</sup> A longer period would be necessary for cavalry and horse artillery, but as only a rough approximation is attainable it is unnecessary to complicate the calculation.

peace establishment of, say, 180,000 men, which, allowing for an annual wastage of 3 per cent., would be maintained by an annual contingent of, roughly, 94,250. Now, assuming the periods of service in the various categories to be fixed, as in Germany, at two years with the colours, five years in the Reserve, eleven years in the second Line, and six years in the third Line troops; and taking the annual waste of 3 per cent., we get approximately the following number of fully-trained men:—

Standing Army and Reserve	-	-	-	491,000 <sup>1</sup>
Second Line troops	-	-	-	739,000
				<hr/>
Total available for Active Army	-	-	-	1,230,000
Third Line troops	-	-	-	297,000
				<hr/>
Grand total	-	-	-	1,527,000

If the peace establishment of units be taken at one-half to three-fifths of that for war, an army corps on the peace footing would number about 18,000 warrant and non-commissioned officers and men of all arms. The Army might, therefore, be conveniently organised in ten army corps, of which eight would be located in England and Wales, and one each in Scotland and Ireland, the Irish contingent being, for the reason already given, distributed among the three or four corps most conveniently situated. The number of units required to form the ten army corps, and the number which would have to be raised in addition to those already existing, are given in columns three and four of Appendix E. The cadres only of some of these units need be maintained in peace.

As regards the cavalry, after deducting ten regiments which would be required for the divisional and corps troops, three regiments of household cavalry and eighteen regiments of the Line would be available for the formation of independent brigades, *i.e.*, one brigade of household cavalry and six brigades of cavalry of the Line. If we consider the difficulty of transporting cavalry by sea and the general unsuitability of the country at home for that arm, it seems likely that this force would suffice for all requirements.

The number of units of each arm at present stationed abroad is given in Appendix E, column 5. These would have to be newly raised by voluntary enlistment, the cavalry regiments being linked to regiments of the home Army for purposes of promotion, transfer and exchange of officers, and enlistment and training of recruits. The batteries would form part of the Royal regiment, and the infantry battalions would form third battalions of seventy-five of the home regiments. The ties between the two Armies would thus be made as close as possible, and uniformity of system, training, and efficiency would be promoted.

The question of comparative cost is much more difficult, and can only be dealt with in a general and very partial manner. A rough comparative statement of the Army expenditure of Germany and England is given in Appendix F, but the conditions of the two countries are so widely different that no practical utility can be claimed for it. In Germany the pay of the soldier is fixed so low that men are unable to get through

<sup>1</sup> Men under one year's service omitted.

their Army service without drawing on their relatives, and the comparatively low prices which obtain considerably reduce the expenditure on officers' pay, and on supplies, clothing, etc., as compared with the amount of these items in our Estimates. Moreover, the heading under which the expenditure is arranged in the two budgets are so divergent, and include such various items, that, in the absence of a detailed statement of the German expenditure, a correct comparison is impracticable. The relatively small cost of the German war office and general staff is, however, to some extent due to the compulsory system, which at once facilitates decentralisation and simplifies the work of the staff. The cost of the German staff is also kept down by the method of reducing the permanent staff to a minimum, and employing unseconded officers to a large extent to assist the Regular staff in their routine work.<sup>1</sup> The absence of any personal staff is another noticeable feature in the German organisation. The expenditure on the maintenance and arming of fortresses is also much less than ours. The necessity for a number of fortified places is imposed on us by the conditions of our sea-frontier, which renders many important places—arsenals, dockyards, etc.—liable to attack by a hostile fleet, against which they can only be secured by suitable fortifications suitably armed. But the existence of a mobile and efficient field army would secure our land fortifications from attack, and would probably enable a reduction to be made in their annual cost. At present the inefficiency of our forces must be compensated for by the strength of the defences which they would garrison in war.

A substantial saving would be effected by the elimination of all expenditure in connection with Auxiliary forces, and the Army Reserve except when called out for training. Half-a-million sterling would also be saved on account of deferred pay. The total saving on these items would amount to about two and three-quarter millions.<sup>2</sup>

The peace establishments of the various units would also be capable of considerable reduction. The provision of a sufficient reserve of officers to fill the junior ranks on mobilisation would render it possible to reduce the number of officers. The drain on our home battalions caused by the provision of drafts for the foreign battalions would cease. The recruits enlisted and trained for the colonial Army by the units of the home Army would be supernumerary to the establishment of the latter, and the cost of their maintenance would be borne proportionally by Indian, colonial, and home revenues. India would probably not be, on the whole, a loser by this arrangement, for all men sent out would serve their full term except in the case of whole units being relieved, and hence the extra cost entailed by more frequent reliefs would be avoided. It is also probable that the cost of raising and training recruits for India, which is at present defrayed by the Indian Government, would be reduced.

<sup>1</sup> Thus a brigadier-general has one adjutant, a divisional general one staff officer and two adjutants, and an army corps commander two staff officers and four adjutants.

<sup>2</sup> See Appendix G.



In order to arrive at some idea of the comparative expenditure on account of pay, what might be considered a suitable establishment for an infantry battalion is given in Appendix H, Tables 1 and 2. It is assumed that the organisation of the foot guards would be assimilated to that of the Line, and the rates of pay are taken at one-half of the present rates, except in the case of long-service warrant and non-commissioned officers appointed from the colonial Army, who are allowed the present rates. Table 3 gives the total pay of the infantry of the ten army corps, as compared with the expenditure which would be involved if the men were paid at the present rates. It must, however, be remembered that, to obtain the required number of recruits by voluntary enlistment, these rates would certainly have to be considerably increased.

Having now arrived at some general ideas regarding the organisation of the home and colonial Armies, we are in a position to consider the difficulty which has already been commented upon at page 1099, namely, the provision of an expeditionary force for minor operations elsewhere than in India. It has hitherto been assumed that the strength of the colonial Army would be fixed according to the requirements of our foreign garrisons, which would not, except in India, admit of troops being withdrawn to any great extent from their ordinary duties for the purposes of a "small war." It is obvious that the mobilisation of any portion of the home Army for such a purpose would be inexpedient, on account of the extra hardship which it would impose on the small section of the Reserve which would be called out; the *raison d'être* of the home Army being to provide a large force for home defence, or for a great war arising out of circumstances which might threaten the more vital interests of the Empire. Special arrangements would therefore be required to provide a small force for such expeditions as might not involve questions of sufficient importance to justify a call being made on the home Army. Probably an infantry division, and one or two cavalry regiments, with a battalion of mounted infantry, would suffice for all requirements. This force might be provided in one of three ways:—

1. By adding the required force to the establishment of the colonial Army, certain units of which would be quartered at home. This would involve the extra expense of keeping up a force which might not be required once in a decade, and the cost of reliefs would also be increased.
2. By maintaining in peace only the extra cadres required; completing the regiments, when necessary, by calling up a portion of the colonial Reserve. The regiments so formed would lack cohesion, for the men would have served in several different regiments, and would be strangers to each other and to their officers.
3. By forming the requisite number of units of the home Army by the enrolment of men of the annual contingents who might be induced by bounties, or by a slightly higher rate of pay, to enter as volunteers for the expeditionary force.

This would probably be the least objectionable solution of the problem, but it also would present disadvantages. The units so constituted would not be territorial, and the recruiting and mobilisation arrangements would therefore be complicated; as in the case of our present system, the supply of recruits would be uncertain, and the withdrawal of the troops in question for an expedition would interfere with a general mobilisation. It does not, however, often happen that rapidity in the despatch of a small expeditionary force is of great moment, and it would certainly be executed as rapidly as is possible under the present system. It is also quite certain that the whole Army would rarely be required to take the field at once, and then only in the event of invasion. The number of troops which could be sent abroad at any one time would necessarily be limited by the amount of sea transport which might be available, so that if the troops of the expeditionary force were allotted to one or two army corps there would be ample time to replace them by Reserve units before the corps of which they formed part could be required to take the field. It is, moreover, reasonable to suppose that England would be most liable to invasion when engaged in a great war abroad, for which an entire army corps would be employed, the expeditionary force being left untouched. The corps remaining at home under such circumstances would therefore be complete.

After all, the whole question of the compulsory system hinges on expense. The argument of this essay is based on the supposition that we may, at some future time, be compelled to resort to this system in order to maintain an Army sufficient for our requirements, and at a cost which will not entail excessive taxation. Economy would, therefore, have to be considered in every detail of the organisation.

It may be asked, what possible advantage could accrue from the maintenance of an Active Army, of nearly half-a-million, supported by a still greater force in second Line, seeing that the number of troops we could send abroad would be limited by the amount of sea-transport at command? It has been shown, on the basis of an experimental allotment, made by the Admiralty some years ago, of ships which happened to be available on a certain date for the transport of a supposed expeditionary force,<sup>1</sup> that we should not be able, without throwing the sea-traffic of the country into disorder, to provide transport for more than two army corps at once, or for one army corps with a cavalry division and troops for the line of communication, for which a net tonnage of about half-a-million tons would be required,<sup>2</sup> and that any additional troops would have to be conveyed to the seat of war by a

<sup>1</sup> See "Lectures on Staff Duties," edition 1890, p. 169.

<sup>2</sup> Approximate estimate for "long voyages," see "Soldier's Pocket Book," edition 1886, p. 197.

second trip of the same ships. Since that period, however, our steam mercantile marine has achieved an increase of about one-fourth, or approximately one million tons, and the shipping statistics show that it is expanding at an average rate of about 180,000 tons yearly.<sup>1</sup> It seems likely, therefore, that we could, at the present time, provide transport for nearly double the force mentioned above, and for a still larger force, should the greater interests of the Empire demand exceptional sacrifices, while the force which could be conveyed for short voyages would be relatively greater. Nor is there any reason to suppose that our mercantile marine has attained its fullest development.<sup>2</sup>

Nor does it seem likely that we shall ever be required to place a large force in line of battle within striking distance of an enemy, and in a limited time, as Continental nations may at any time have to do. The command of the sea gives us a peculiar advantage in this respect, enabling us to fix our base at whatever point may be most advantageous, and to keep the enemy in ignorance of our intentions up to the last moment. It is, therefore, likely that our advanced force could often be disembarked at some place where it would be beyond striking distance of the enemy's concentrated forces, or where it could hold its own until the arrival of the second instalment of troops; and the enemy would be hampered by uncertainty regarding the movements of the latter.

Whether or not we are ever likely to be forced to adopt the compulsory system, is an inquiry which does not concern the present subject. It is certain that so long as our national requirements and policy are satisfied by the forces which we at present maintain, any departure from our voluntary system would be detrimental, not only to individual, but to national, interests. It is, however, one of the peculiarities of the national temperament that the most consistent Ministry may, at any moment, have to reverse its policy in compliance with the clamour of popular meetings<sup>3</sup>; and, quite apart from the question of invasion, it is not impossible that this force of popular feeling may, at some future time, drive us into foreign complications with which we should, in the present condition of our military forces, be unable to cope. If our system is ever changed, the transition must be led up to by natural and uncontrollable causes. Although, when a large Army has to be maintained, the compulsory system presents conspicuous advantages, it is not one which can be arbitrarily adopted. It must be freely accepted by the nation; and the sacrifices which it imposes on individuals, even though compensated for somewhat by indirect gains, demand a kind of national heroism, and a personal self-abandonment for the general welfare, which only the sternest necessity can evoke.

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<sup>1</sup> See "Statesman's Year Book," 1896, p. 87.

<sup>2</sup> In moderate weather, and for short voyages, it would also be possible to employ sailing-ships towed by steamers, as was done in the case of the troops sent from India to Cyprus in 1878.

<sup>3</sup> Curiously enough, only a few days after this sentence was written, an instance occurred of this kind of pressure being exercised in connection with the Armenian massacres.

## APPENDIX A.

MOVEMENTS OF  
MILITIA ARTILLERY ON MOBILISATION.

Corps	From	To
Argyll and Bute Artillery -	Campbelltown -	Portland
Durham Artillery - - -	East Hartlepool -	Plymouth
Northumberland Artillery -	Berwick-on-Tweed -	"
Yorkshire " - - -	Scarborough -	"
Edinburgh " - - -	Edinburgh - -	Portsmouth
Fife " - - -	Cupar - - -	"
Forfar and Kincardine Artillery -	Montrose - - -	"
Haddington Artillery - - -	Dunbar - - -	"
Lancashire " - - -	Seaforth - - -	"
Clare " - - -	Ennis - - -	Dover
Donegal " - - -	Letterkenny - -	Harwich
Limerick City " - - -	Limerick - - -	Thames Defences
Londonderry " - - -	Londonderry - -	Portsmouth
Wicklow " - - -	Wicklow - - -	"
Tipperary " - - -	Templemore - -	Plymouth
Waterford " - - -	Waterford - - -	"
Sligo " - - -	Sligo - - -	Portland

## APPENDIX B.

## NUMBERS EMIGRATING FROM GERMANY.

Year.	No. of Emigrants.
1881 - - - - -	220,902 <sup>1</sup>
1890 - - - - -	97,103
1891 - - - - -	120,089
1892 - - - - -	116,339
1893 - - - - -	87,677
1894 - - - - -	40,964

<sup>1</sup> The largest number on record for any one year.

## NUMBERS EMIGRATING FROM THE UNITED KINGDOM.

Year.	No. of Emigrants.
1891 - - - - -	334,543
1892 - - - - -	321,397
1893 - - - - -	307,633
1894 - - - - -	226,827
1895 - - - - -	271,854

## APPENDIX C.

## STATISTICS OF POPULATION, MARRIAGES, AND BIRTHS—GERMANY.

*See Statesman's Year-Book, 1896.*

Year	Population	Number of Marriages	Percentage of Marriages per head of population.	Number of Illegitimate Births	Proportion of Illegitimate Births to population.
1872	41,058,780	423,900	1.03	No records available.	
1876	42,752,555	306,912	0.85	No records available.	
1889	48,952,491 <sup>1</sup>	387,339	0.79	170,572	1 per 281 of population
1890	49,428,470	395,356	0.79	165,672	1 " 299 "
1891	49,894,449 <sup>1</sup>	399,398	0.80	174,256	1 " 289 "
1892	50,360,428 <sup>1</sup>	398,775	0.79	169,608	1 " 297 "
1893	50,826,406 <sup>1</sup>	401,234	0.79	175,352	1 " 288 "
1894	51,292,385 <sup>1</sup>	} No records available.			
1895	51,758,304				

<sup>1</sup> Estimated by proportion from Census returns of 1890 and 1895.



## APPENDIX D.

## STATISTICS IN CONNECTION WITH THE POPULATION OF THE UNITED KINGDOM.

*From the Statesman's Year-Book, 1896*

Country	Total population	Total births <sup>1</sup>	Male population	Male Births <sup>1</sup>	Approximate annual contingent <sup>2</sup>
England and Wales - - -	29,002,525	914,157	14,052,901	465,469	186,187
Scotland - - -	4,025,647	125,986	1,942,717	63,862	25,545
Ireland - - -	4,704,750	108,116	2,318,953	53,911	21,564
Isle of Man and Channel Islands - -	147,234	4,446	69,555	2,188	875
Total - - -	37,880,156	1,152,705	18,384,126	585,430	234,171

<sup>1</sup>These numbers are approximate only.<sup>2</sup>The numbers in this column are arrived at on the assumption that the number of young men annually attaining the military age is two-fifths the number of male births, which is probably a good way below the mark.

## APPENDIX E.

STATEMENT SHOWING THE NUMBER OF UNITS OF  
EACH ARM REQUIRED UNDER THE ASSUMED  
ORGANISATION.

Arm	Units now existing	Units required for Ten Army Corps	Units required in addition to those now existing	Units required for the Colonial Army
Household Cavalry - -	3	—	—	—
Cavalry of the Line - -	28	10	—	11
Artillery, Horse Batteries -	20	30	10	11
„ Field „ -	80	110	30	43
„ Garrison Companies	87	—	—	—
Engineers Field Companies -	8	40	32	—
„ Telegraph Bn. -	1	5	4	—
„ Pontoon Troops -	2	10	8	—
„ Fortress Cos. -	17	—	—	—
„ Submarine S. & M.	11	—	—	—
„ Railway Cos. -	2	—	—	—
„ Survey Cos. -	4	—	—	—
Infantry Guards Battalions -	7	8	1 <sup>1</sup>	—
„ Line „ -	129	232	102 <sup>2</sup>	75
„ Rifle „ -	12	10	—	—
Army Service Corps Cos. -	38	100	62	—

<sup>1</sup> One Line battalion to be Guards.

<sup>2</sup> In addition to two rifle battalions to be reconverted to Line battalions.

## APPENDIX F.

COMPARATIVE STATEMENT OF ENGLISH AND GERMAN  
MILITARY EXPENDITURE.

Items	England <sup>2</sup>	Germany <sup>3</sup>
	£	£
War Office - - - - -	253,500	92,215
Pay Department - - - - -	147,700	12,975
Army Service Corps - - - - -	300,400	86,740
Chaplains' Department - - - - -	60,140	32,152
Judge Advocate-General's Department	3,100	34,123
General Staff - - - - -	192,000	298,049
Regimental Pay, Allowances, &c. -	6,192,600	7,557,843
Supplies - - - - -	2,519,900	4,013,103
Clothing - - - - -	858,600	1,118,133
Medical Department - - - - -	372,600	316,005
Remounts - - - - -	83,100	363,932
Transport - - - - -	577,100	273,677
Military Education - - - - -	122,600	251,328
Military Prisons - - - - -	27,200	39,186
Warlike and other Stores - - - - -	2,133,000	687,422
School of Gunnery and Musketry -	28,500	32,387
Works, Buildings, &c. - - - - -	1,007,700	126,264
Miscellaneous - - - - -	55,760 <sup>1</sup>	6,054
Bavarian Army - - - - -	—	2,292,299
Total of above items - -	14,935,500	17,633,887
Administration of Train Depôts, &c.	—	40,956
Military Widows' Fund - - - - -	—	53,328
Non-Effective Votes - - - - -	3,049,600	—
Militia, Yeomanry and Volunteers -	1,245,500	—
Total - - - - -	19,230,600	17,728,171
Deduct appropriations in Aid Vote II.	1,174,000	—
Total of Army Estimates -	18,056,600	17,728,171

## ESTABLISHMENTS ON WHICH THE ABOVE ESTIMATES WERE BASED.

—	England	Germany
All ranks - - - - -	147,105	503,782
Horses - - - - -	14,716	105,679

<sup>1</sup> Includes Vote XII. "Miscellaneous Effective Services," and some miscellaneous items in other Votes.<sup>2</sup> Army Estimates for 1896-97.<sup>3</sup> "Armed Strength of Germany," Part I., p. 16.

## APPENDIX G.

Items of Expenditure	Amount	
Regimental Deferred Pay -	502,000	Vote 1
Pay of Army Reserve -	719,000	" 1
Militia Pay, &c. <sup>1</sup> -	541,515	" 3
Yeomanry Pay, &c. -	73,010	" 4
Volunteers Pay, &c. -	625,000	" 5
Clothing Expenses, Militia <sup>1</sup> -	205,130	" 8
" " Volunteers	5,400	" 8
Total - - -	2,671,055	

Army  
Estimates,  
1896-7.

<sup>1</sup> Colonial Militia not included.

## APPENDIX H.

TABLE I.—PAY AND ESTABLISHMENT OF A BATTALION  
OF FOOT GUARDS (PEACE FOOTING).

Rank	No.	Daily Pay	Yearly total pay
		<i>s. d.</i>	<i>£ s. d.</i>
Lieutenant-Colonel - - -	1	23 0	419 15 0
Majors - - -	3	13 7	743 13 9
Captains - - -	6	11 7	1,268 7 6
Lieutenants - - -	6	6 6	711 15 0
2nd Lieutenants - - -	2	5 3	191 12 6
Adjutant - - -	1	10 0	182 10 0
Quartermaster - - -	1	9 0	164 5 0
Sergeant-Major - - -	1	5 2	94 5 10
Bandmaster - - -	1	5 0	91 5 0
Superintending Clerk - - -	1	5 6	100 7 6
Quartermaster-Sergeant - - -	1	4 0	73 0 0
Sergeant-Instructor-Musketry - - -	1	3 3	59 6 3
Orderly-room Sergeant - - -	1	2 6	45 12 6
Sergeant-Drummer - - -	1	2 6	45 12 6
Colour-Sergeants - - -	8	3 2	462 6 8
Sergeant-Cook - - -	1	2 6	45 12 6
Sergeant-Pioneer - - -	1	2 6	45 12 6
Sergeants 1st Class <sup>1</sup> - - -	16	2 6	730 0 0
Sergeants 2nd Class - - -	8	1 3	182 10 0
Drummers - - -	16	0 7	170 3 8
Corporals 1st Class <sup>1</sup> - - -	24	1 9	766 10 0
Corporals 2nd Class - - -	8	0 10½	127 15 0
Privates - - -	512	0 6½	5,061 6 8
Total all ranks - - -	621	—	11,783 5 6

<sup>1</sup>Appointed from the Colonial Army.

## APPENDIX H.

TABLE II.—PAY AND ESTABLISHMENT OF A BATTALION OF THE LINE (PEACE FOOTING).

Rank	No.	Daily pay		Yearly total pay		
		s.	d.	£	s.	d.
Lieutenant-Colonel - - -	1	18	0	328	10	0
Majors - - - - -	3	13	7	743	13	9
Captains - - - - -	6	11	7	1,268	7	6
Lieutenants - - - - -	6	6	6	711	15	0
Second Lieutenants - - -	2	5	3	191	12	6
Adjutant - - - - -	1	16	7	302	12	11
Quartermaster - - - - -	1	9	0	164	5	0
Sergeant-Major - - - - -	1	5	0	91	5	0
Bandmaster - - - - -	1	5	0	91	5	0
Quartermaster-Sergeant - -	1	4	0	73	0	0
Sergeant-Instructor-Musketry -	1	3	3	59	6	3
Orderly-Room Sergeant - -	1	2	6	45	12	6
Colour-Sergeants - - - -	8	3	0	438	0	0
Sergeant-Drummer - - - -	1	2	4	42	11	8
Sergeant-Pioneer - - - -	1	2	4	42	11	8
Sergeant-Cook - - - - -	1	2	4	42	11	8
Sergeants 1st Class - - -	16	2	4	681	6	8
Sergeants 2nd Class - - -	8	1	2	170	6	8
Drummers - - - - -	16	0	6½	158	3	4
Orderly-Room Clerk - - -	1	1	8	30	8	4
Corporals 1st Class - - -	24	1	8	730	0	0
Corporals 2nd Class - - -	8	0	10	105	0	0
Privates - - - - -	512	0	6	4,672	0	0
Total all ranks - - -	621	—		11,184	5	0

## APPENDIX I.

REGIMENTAL PAY OF THE INFANTRY OF TEN ARMY CORPS (PEACE FOOTING).

	No. of Guards Battalions	No. of Line Battalions	Pay, all ranks.
Amount of pay under assumed organisation - - - -	8	242	2,800,860
Amount of pay at present rates and establishments <sup>1</sup> - - -	8	8	5,036,100

<sup>1</sup> Not including deferred pay.



## RAPID CABLE LAYING FOR WAR PURPOSES.

*By Lieutenant WILLIAM C. CRUTCHLEY, R.N.R.,*

AND

*C. SCOTT SNELL, Esq.*

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Wednesday, April 28th, 1897.

Lieut.-Colonel Sir GEORGE S. CLARKE, K.C.M.G., F.R.S.,  
in the Chair.

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THE CHAIRMAN :—I do not think there is any subject which can be brought before the Institution which is more valuable to this country than the question connected with the use of cables in war. In peace we see every day our fleets moved throughout the world by cable messages, and we know that our foreign commerce is practically also all directed by cable. What we do not know yet, and what we want to know is, how far that communication can be carried on in war. Anything, therefore, which will facilitate that communication and enable us to keep up the stream of information which we require, seems to me one of the greatest advantages we can possibly obtain. I am sure, therefore, the lecture we are about to hear will be both valuable and instructive, and I will call upon Lieutenant Crutchley to read his paper.

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### LECTURE.

SUBMARINE telegraphy in any future naval warfare must inevitably play a very important part.

If the mind can imagine so unusual a state of things, consider what would be the position of Great Britain separated from contact with the world save by steamer alone. Early intelligence in all naval warfare in the past has proved itself invaluable, and there is no reason to believe that it will be of less importance in the future, when the facilities for combination afforded by steam are contrasted with the naval combinations made under sail in the earlier portion of the century.

The object in reading this paper is to elicit an opinion whether in future operations it will be to the advantage of a naval commander-in-chief to have at his disposal the means of establishing communication with either a base, or outlying pickets of ships at a moderate distance, say from 300 to 500 miles. Not only so, but whether the fact of his being able to establish such communication at the fastest speed yet attained by a war-ship may not be of material value in working out a combination of effective force.

It is claimed by the inventor of this apparatus that he can safely lay a submarine cable at any rate of speed within the compass of the fastest cruiser. This would be so far in excess of anything which has hitherto

been accomplished, that some doubt might be expressed as to the possibility of so doing; but that the plan is feasible, is vouched for by so eminent a practical authority, that little doubt can be entertained as to its possibility.

It is needless to say that practical illustration of this would cost more money than it might be convenient to find for such demonstration; but should the verdict given this afternoon be favourable, I have little doubt that such demonstration will be made.

The apparatus is capable of being fitted to a war-ship or a properly equipped telegraph-ship, or as an alternative there is a temporary arrangement which is capable of being adapted to any vessel at very short notice.

Recent discoveries in electricity have given us greater power in communicating than we have hitherto possessed.

I speak now of the possibility of inducing currents in a cable without making actual metallic contact, and that this can now be done is established beyond any doubt (particulars are given in an appendix); it is, therefore, a further reason why such a scheme as is now brought before you should receive your most earnest attention.

With these few introductory remarks I will now pass to a description of the apparatus, and will afterwards sketch out one plan of how this might be of the utmost value in war-time; and the reason I select the instance I do, is that by selecting operations in peace, for example, we offend the susceptibilities of no one.

We may with advantage first take into consideration the type of cable proposed to be used, and in connection with this the following from an eminent maker may be quoted:—"As regards the cost of a submarine cable which would suit your proposed scheme, and which it would be possible to lay and lift more than once, we could supply a small bright cable as under: A conductor of seven tinned copper wires, each No. 22 L.S.G., stranded; insulated with pure and vulcanised india-rubber, sheathed with steel wires, made up in strands of three wires, each No. 20 L.S.G. The price of this cable would be £60 per knot, delivered in tank at our works. The total over all diameter would be 0.45 inch, and the weight 11.4 cwt. dry in air, or 8.75 cwt. when immersed in salt water, the above weights being per knot.

In relation to this matter the mind must be quite disabused of the idea that the cable is to be dragged out of the vessel, as in every-day practice; were this so, the length of the cable, when laid at such a high speed, could not by any means exceed the distance traversed by the ship, it is, however, essential that provision should be made for such a surplus delivery as will admit of inequalities in the sea bottom being provided for, so that no long unsupported spans are likely to exist. At the ordinary speed of cable laying, the cable forms an inclined plane down which, as it were, a percentage of slack can be delivered by loosening the brakes on the retarding gear. At such a speed as 20 knots it is evident that the angle assumed by the cable must be very small, possibly less than five degrees; we therefore find ourselves working under very different conditions,

It will not be denied, however, that it would be possible to lay a thread of cotton from such a vessel as the "Lucania" on an Atlantic voyage, providing always that the thread was not dragged out of the ship but was thrown away from a wheel at the stern, at a rate in excess of the speed of the vessel. No doubt such a fragile material would be soon destroyed by the action of the waves and currents; but, nevertheless, there is no reason why continuity of delivery into the sea should be imperilled. With the ship at anchor there is, of course, no reason why 21 knots of cotton should not be paid overboard within the hour.

We will now take our electric cable into consideration, and it must be admitted that if this also be similarly handled, we are justified in adopting a similar conclusion; further, although a lengthy term of service is not likely to be required, reliability is a very important factor, and we are, therefore, justified in delivering overboard a goodly margin of slack; dividend paying considerations of course do not obtain.

The mechanical methods to be employed in order to throw overboard cable at the rate proposed require careful consideration. Let us at the outset remember that steel cables for power transmission purposes are in daily use at such speeds as 80 feet per second, *i.e.*, about double the rate of our maximum demand. There is no reason why the appliances used in power transmitting plants should not, with slight modifications, feed a quantity of cable stored in one position, to another some hundreds of feet away, instead of operating an endless cable. This is exactly what we are contriving to do, in delivering from the hold of the vessel into the sea astern. In our sea service, however, we have extra contingencies to provide for, such as the risk of error in making due allowance in the matter of "slack," thus causing a stress to come upon the cable from without the ship.

The presence of such a strain it is proposed to notify, as well as to make provision against ill effects, by the following arrangement: A pulley at the stern *ejects* the cable overboard, and is driven by a motor capable of exerting only a comparatively small power, and beyond this stern pulley (if we consider the ship from the stern towards the bow), we find a wide drum over which is passing the cable on its way from the hold. In conjunction with this drum, in a manner to be hereafter described, is maintained 2,000 feet of cable under a constant tension; and until this bight of the cable between the stern pulley and the main supply is all paid out, no abnormal stress can be set up on the rest of the cable. As the very lessening of the amount of this bight can be made to increase the supply of steam or other power to the main paying-out engine, if "power" be used for this work, it is only the delay in the responsiveness of such engine and its load that has to be provided for. Now a bight of 2,000 feet would provide an increase of 10 per cent. over the vessel's speed of 20 knots, for about ten minutes, and the question of the sufficiency of the length of the cable held in hand depends upon how we carry our cable.

For instance, let us suppose we take 300 knots of cable as a convenient unit, which will weigh 180 tons and may be conveniently contained

in a compact cylindrical tank, lying longitudinally in the ship. In length and diameter this tank is sufficient to admit of a drum or bobbin rotating within it, of the following dimensions :—

Between flanges	-	-	-	-	-	15½ feet.
Diameter of flanges	-	-	-	-	-	15 "
" " core	-	-	-	-	-	6 "

The capacity would be equal to 300 knots of cable; in size the tank is about the same as many double-ended boilers.

The driving power may consist of a set of engines capable of indicating say 150-H.P., thus giving power enough to enable the fully-loaded drum to be given a paying-out speed of 20 knots, from a state of rest, within 100 seconds; or, if already running at that speed, an additional 10 per cent. increase can be effected in ten seconds, whereas we hold in hand ten minutes' supply. With the drum fully loaded the revolutions will be about 45 per minute, and with the drum nearly depleted it must be rotated at about 100 revolutions per minute; the command, however, in the latter case is so perfect, that the power is more than ample.

Obviously if such a drum is arranged in the after hold, a similar one may be adapted to the fore hold, thus admitting of carrying 600 knots.

As this load would be very small for a merchant cruiser or other lightly-armed steamship, she could carry a large stock of coal or other "fleet" requirements.

The idea of a cable running out at 20 knots may be rather startling; therefore particulars of analogous operations are given as an appendix at the end of the paper.

Let us now consider more in detail the means proposed for holding in hand and completely stowing 2,000 cubic feet of cable; this apparatus we will hereafter call the Cable Accumulator.

In principle it consists of a pair of sheaves over which the cable is led (see Figure No. 1), a bight of 2,000 feet being allowed to hang down; to this a constant tension is applied by a weight upon a third sheave. A vertical traverse of a 1,000 feet is obviously impossible on board ship; if, however, the two upper sheaves (see Figure No. 2) are placed side by side, and are of considerable width, *each* sheave constitutes a drum capable of holding 1,000 feet of cable, and we may imagine that by the filling of the drum our third sheave and its weight have been raised until they are in danger of being carried around with the drums. At this point we will dispense with the idea of a weight, and attach our sheave to an arm radiating from the part of the axle between the two drums (see Figure No. 3); the sheave is then free to revolve in a plane tangential to the circumference of the two drums, at the same time it has a clear orbit around them.

Now by controlling the axle where it projects beyond the two drums (these being loose upon it), we are able to put a retarding force upon the tendency to carry the sheave around the drums, thus effecting exactly the same result as attained by the weight previously referred to. Assuming that our system has now become as shown in Figure No. 3, and that the weight *W* there represents the effect of a small hydraulic, steam

or electric motor, it will be seen that if the rate of supply of cable at *A* is say 20 feet per second, whilst the rate of demand at *B* is 21 feet per second, the tangential sheave will be carried around against the torsion of its motor, by which will be maintained a steady retarding stress. In 2,000 seconds of time both drums will be practically empty; for each complete revolution of the arm will take one turn off each drum. This arm and accessories will be rotating at a speed of two revolutions per minute; and meantime the two drums and the sheave are making very rapid revolutions on their separate axes, quite independently of any other motion.

To prevent such a climax as the total clearance of all the turns of cable from off the drums, any movement of the torsion producing motor, typified by weight *W*, will be the signal to the man in charge of the engine operating the main power rotated drum to re-adjust the engine speed, the duty of this particular driver being simply to so regulate his engine as to keep the drums adequately supplied with cable. This might be automatically effected if wished, but might increase risks. It now becomes plain that no strain above a pre-arranged amount, that amount in fact to which the motor controlling the tangent sheave may be adjusted, can occur; even indeed when there is an error of judgment as to the amount of slack required.

In this system the rate of delivery overboard is governed by the speed given to the stern pulley, and in the event of an outside stress occurring, due of course to insufficient speed in paying out, the stern pulley acquires an increased rate of revolution, and the speed indicator attached to it fails to tally with a standard instrument to which this driver is supposed to work. Should he then even cut off his power supply entirely, he will produce no diminution of speed. No injury, however, occurs to the cable on account of the flexibility, as it were, produced by the accumulator coming into play, but the officer in charge must now arrange for an increase in the driving speed.

The electrical controlling instrument designed for use in conjunction with the work, is shown in the drawings and described in an appendix, but time does not admit of a description at this point. It may, however, be briefly described as an instrument which enables the rate of speed as registered by the log to be indicated to the driver with such a plus or minus reading as shall cause proper allowance to be made for tides, etc. The bearings for a drum of the weight proposed become a matter of very great importance, and the inventor has, therefore, requested the Revolving Bearing Company to submit a special design and model, which are shown. The automatic mechanism inside the main tank, for ensuring regularity in laying each convolution of cable as received, is shown and described in the appendix.

As an alternative plan for carrying the cable, a number of rigid drums of about 40 knots capacity each, are proposed, the height and diameter being such that they may be readily stowed between decks; this system is fully described in the appendix, but in either system there is the minimum of delay in taking in cable, an important item in war operations, so impor-



tant indeed, that the ordinary methods of handling cable, both in taking in a supply or in paying out, would be under serious disadvantage. In the latter case protection by strong convoy would be needed, beside making the operations in hand plain to the enemy's scouts. The one case in point, as an illustration of the value of this invention, is taken from the records at our naval manœuvres of 1888, and here I quote largely from "The Navy and the Nation."

"For the purpose of this experiment it was assumed that war was imminent between two Naval Powers; one, the weaker, represented by Ireland, the other by Great Britain. The enemy was fitting out two fleets in Bantry Bay and Lough Swilly respectively, and two British fleets with their bases at Milford Haven and Lamlash were organised for the purpose of blockading him in his ports."

It is unnecessary before this audience to say more as to similarities of geographical positions.

"Each blockading fleet was superior in strength to the fleet blockaded by it, but the two hostile fleets together were stronger than either of the blockading fleets, *and* they had the advantage of being in immediate telegraphic communication across Ireland, whilst the blockading fleets could only communicate directly by means of cruisers sent from one to the other," or by other indirect method.

It is unnecessary to do more than indicate the facilities afforded by this communication for a blockading squadron to observe an enemy's port from a convenient roadstead; it might materially lessen that strain upon officers and men, which on the occasion we are speaking of was nearly insupportable.

To quote again loosely only:—

Three ships escaped from Berehaven almost unobserved by the blockading squadron and joined two other ships, which escaped from Lough Swilly, at a predetermined rendezvous. The presumption being that this would give the enemy the required superiority over the Northern Squadron, the commander of the Southern Fleet was obliged to raise the blockade of Bantry Bay, at the same time sending his fastest cruiser to warn the commander of the squadron blockading Lough Swilly. The following remarkable words are used:—"It was necessary in the first instance to save the two fleets from destruction in detail, and this could be done if the 'Mersey' joined Rowley in time to redress the balance at Lough Swilly, and to direct Rowley to fall back in the direction of the fast and powerful squadron advancing through St. George's Channel to reinforce him."

With the further second lesson drawn from the manœuvres by the writers of "The Navy and the Nation," I bring these quotations to a close:—"An organised system of coast observation and intelligence is absolutely necessary to a defending fleet, if it is to secure the full advantages of that superiority of force which is England's prerogative on the sea."

No words of mine can add weight to the opinions here expressed, which set forth absolutely the risks which may be incurred by the

unexpected concentration of an enemy's force—risks which would be greatly modified, if not removed, by the adoption of Mr. Snell's invention. Furthermore, there is the great and incalculable boon of being able to lay at full speed a cable where none is shown to exist, and which consequently would not be searched for and destroyed by an enemy.

I have on a previous occasion expressed the opinion that it would be necessary in the event of naval war for the Empire to possess its lines of telegraph communication in positions unknown to the enemy.

The following quotations from a leading article in the *Electrical Review* of April 9th, 1897, are worth attention. Under the title of "The Defence of the Empire," in reference to Lord Carnarvon's letters and speeches, this paper says:—"We think that the warning conveyed in his words to the House of Lords, in a speech made on April 14th, 1885, are worthy of repetition, and might with advantage have appeared amongst the selection. Space will not, however, allow of more than a short extract. In a discussion raised by a question drawing the attention of Her Majesty's Government to the fact that the 'sole method of telegraphic communication with Hong-Kong and some other British settlements in the East was by wires passing through a territory in the possession of a foreign Power, and whether it was the intention of Her Majesty's Government to adopt immediate measures to insure the safety of intercourse by electric telegraph with those parts.' Lord Carnarvon said: 'The matter was a delicate one, but he thought it right to remind the House and the country that in 1878 when there were great alarms as to a Russian war, the Russian Government, who were perhaps more alive to the circumstances of the case than we were, had taken measures for cutting the submarine cables and for equipping ships for that special purpose. It was said at the time, and on good authority, and was generally believed, that there was a carefully elaborated scheme for taking measures against our submarine cables in the Eastern waters. It was quite right to mention these matters now, and he trusted that the Government had not been blind to the danger of leaving them unprovided for; but that while they had had the opportunity and a full warning, they had taken those steps and those measures which might be necessary at any hour.'

"The political outlook to-day is similar in many respects to that existing at the time referred to in the above remarks, and yet we are little, if indeed at all, nearer to a position of safety as regards telegraph communication than we were then. Under such conditions it was, to say the least, disquieting, to know that the only two direct cables between Malta and Alexandria were simultaneously interrupted a fortnight ago, the Eastern Telegraph Company announcing that telegrams for Egypt by their cables suffered delay; and communication was not restored for about a week. In a time of international complications such as the present, it is not at all re-assuring to call to mind that in the event of the two cables between India and Egypt being interrupted, our only reliance for news to or from India, China, and Australia, must be placed on land-lines, one of which passes through Persia and Turkey, etc., and the other

across Siberia and Russia. In reference to one of these routes we may, perhaps, be allowed to quote from a note which appeared some time ago in these columns. 'The Russian Telegraphic Administration has informed the directors of the Indo-European Telegraph Company, Limited, that the latter will not in future be permitted to fill up vacancies which occur in the company's Russian stations with English operators; telegraphists from the Russian service are to be recruited for this purpose.'

"With such knowledge available, it is astonishing that no effective means have as yet been taken to place beyond danger our means of assured telegraph communication between England and her Eastern and Australasian possessions."

The plan which is here adopted, not by any means perfect in detail, yet gives a workable scheme which should render this object a matter of comparatively easy accomplishment. The main object at which the inventor of this plan and myself wish to arrive at this afternoon is to ascertain, as was previously stated, whether there is sufficient advantage to be got from it, to compensate for the outlay of money it would cost.

I ought, perhaps, to state that although I have modified details of the apparatus, the invention is that of Mr. Snell, to whom I shall refer you for any explanation of mechanical details.

## APPENDIX A.

### SMALL UNIT SYSTEM OF CARRYING CABLE.

This consists in placing the cable on board in drums of 40 knots capacity, and arranging them in columns. The cable is drawn alternately from each column, the wire throughout being already suitably joined up.

Two sets of special paying-out gear are arranged at the head of the columns, and as a drum gets depleted the continuation of the cable leads to the adjacent drum. The paying-out gear of the depleted drum is afterwards lifted off, and the next full drum brought into position under the gear, which is again lowered into place, and the tail wire then properly arranged on the pulleys. This operation would be required once every two hours with the vessel going 20 knots, and thus ample time exists for making the exchange of drums.

Examination of the drawings will show that an outer horizontal guide wheel, carried on a rotating arm, receives the cable as it is drawn over the rounded nosing on the drum. It is then passed to a second guide wheel in a different plane, which is mounted in such a manner as to admit of travel vertically under the tension produced on the cable, and this movement, acting upon two bell crank levers, loosens a band brake which otherwise tends to retard the rotation of the arm. This brake is put on by a spring.

By this system the cable is drawn off always under a certain amount of tension, and a lessening demand causes the brake to be applied until the speed of rotation of the arm is suitably reduced. The overhead guide wheel is mounted to swivel automatically when the last turn of cable is

run off a drum, as the cable, of course, leaves the rotating system immediately below and begins to feed from the adjacent drum.

The tail wire from one drum leads over the overheard guide wheel of the next drum, then under the vertical wheel beneath and so on, thus forming the commencement of the next drum of cable.

The counterweight on the rotating arm it is proposed to place, at first, near the centre of rotation, allowing it to run out under centrifugal force. This will admit of quicker starting from a state of rest. In the drawings this is not shown, but the modifications necessary would be very simple.

In case of a change in supply from one drum to another, impending, the brake would be applied to the "receiving drum" of the accumulator or deck, so as to momentarily lessen the speed of *drawing off*, without of course affecting the *paying-out* speed into the sea, the reserve of cable on the accumulator allowing of this operation.

Space does not admit of a fuller description of the system; it will be seen, however, that it has the merit of allowing very rapid loading of a vessel, and a large amount of cable may be carried. The cable would be wound on the drums with a "twist" so as to come off "straight."

Each drum may have a water tank surrounding it, readily detachable when empty drums are returned. This is necessary to enable the cable to be kept wet if the vessel is in port for a long period.

The means of making the drums fast and changing the empty ones for full ones at the heads of the columns is not shown in the drawings; indeed, to reduce the paper within reasonable limits and maintain discussion mainly upon strategic questions, necessitates much cutting down. Should opinion, however, be favourable as to the value of the power to so rapidly lay a cable, attention may afterwards be more fully focussed on the means proposed to effect it.

## APPENDIX B.

### AUTOMATIC TRAVELLER.

The Automatic Traveller, which receives the cable as it leaves the drum, traverses a special alley way, constructed on the side of the tank, as will be seen with reference to the illustrations. A rack runs throughout this alley, in which a worm is caused to gear; this worm being attached to the frame carrying the pulley. On the axle of the pulley is an eccentric or crank which oscillates, by a connecting rod (see *A* in the illustration), a pair of pawls which in turn drive a ratchet wheel in connection with the worm, the connection being made by a pair of bevel wheels. This oscillation produces a similar oscillation in the worm, unproductive of any real traversing action unless one of the pawls is kept out of gear by a special tripping lever (see *B* in the illustration); then as a result an intermittent forward traverse is given to the whole apparatus.

As to which pawl shall be thrown out of action, it is dependent upon the angularity of the cable, which will cause pressure upon one of a pair of wheels at the end of a vertical lever. This lever being connected with





once a second when making 20 knots speed. The disc is provided with projecting pins in electrical connection with the spindle and supporting standard, and by the contact spring shown; as the disc rotates the circuit is completed with the standard engine-room indicator.

If now the travel of the armature carrying the driving pawl be adjusted to a certain amount, each time the magnet is energised it may be made to move the disc so that a corresponding impulse will be transmitted to the engine-room indicator by the contact arrangement before explained. At this point let it be assumed that cable delivery at a rate of 10 per cent. over the vessel's speed is needed; the adjustment screw is slacked back to give the armature a longer stroke, sufficient to produce in one minute, during which the electro-magnet has been energised sixty times, such a rotation to the disc that 66 contacts have passed under the contact spring, and the engine-room standard is therefore showing 66 steps per minute; so that the driver must adjust his engine speed until the second indicator, which is worked by the ejecting drum astern, synchronises with the standard. By putting duplicates of these two indicators into the chart-room, the driver's actions are under supervision; and if he (the driver) finds an outside pull act upon his engine, which is soon evident by its failure to respond to his attempts to synchronise it with the standard indicator, it must arise from a taut cable due to an error in reckoning by the officer in the chart-room. The driver must, therefore, inform that officer by voice tube or electric bell, and he can see at once by the duplicate instruments he possesses that the engine speed is unavoidably running above the officially instructed rate. He then slacks back his adjustment screw to produce increased register in future, and by turning the disc by hand he can cause the standard index to read level with the second or stern drum one; things can then be allowed to run along once more. Great accuracy of adjustment is made possible by the long pointer.

In considering the controlling arrangement, another point which would contribute towards the successful handling must not be lost sight of. That is, all orders telegraphed by the bridge to the main or propelling engines would be made to also ring up the chart-room and cable delivery engine-room, and there show the nature of the orders, thus putting the people in a state of readiness, which would be very handy in case of a change of speed impending. It should be also possible for the cable machinery driver to signal the main engine-room in case of any emergency arising from trouble with his own mechanism.

#### APPENDIX D.

The cutting of a cable which is being paid out at so rapid a rate as 30 feet per second presents certain difficulties and risks, unless it is done quite astern of all gear on deck, and also in a manner which does not entail either a sudden stoppage or a sudden release, to mechanism working under stress.

This severance it is proposed to effect by the following means:—

The cable takes, say, two or more turns around the ejecting, motor-driven drum astern, and it is pressed upon just before leaving the drum by a wheel the same diameter as the drum; chain or other gearing joining them ensures synchronism in the movements of the two. In the periphery of one wheel is fitted a chisel, in that of the other an anvil. This is preferable to two chisels, as a small amount of back-lash in the gearing will not matter where a fairly broad anvil is used, whereas it would upset the meeting of two chisel points.

To these two accessories are fitted tail levers, which, being in different planes, do not meet as the wheels revolve, but if a blade (shown in the drawings and marked as a "parting lever") be dropped between these, each lever is forced inwards, the chisel and anvil protrude as the wheels turn, and the cable is severed.

It will be seen that short lengths would be continually cut off, like a string of sausages, unless the parting lever was at once removed. However, the cut being beyond the position where the cable is gripped, it does not affect the hold, or the load on the machinery generally. The paying-out mechanism may now be stopped as soon as expedient with safety; and here it must be noticed, that if the cable accumulator has been pretty well depleted prior to cutting the cable, it is possible to stop the stern ejecting drum very rapidly, and leave the accumulator to gather in the slack that obtains on account of the momentum of the main drum. With the small unit system the stoppage throughout may be much quicker.

The buoing arrangements shown in the drawings may be used, so that buoing may be also effected at full speed; or it is easy to let the cable-ship pass between two other ships or buoys, connecting which a steel hawser is laid, with plenty of slack. It is thus easy to get hold of the cable without delaying the cable-ship.

The cable, it is assumed, would have a sinking rate of about 2 feet per second, and therefore a following ship in fleet evolutions would not foul it. See the diagram, which also shows that a cable-ship with a turning circle of 840 yards diameter would not cause inconvenience to the cable-laying.

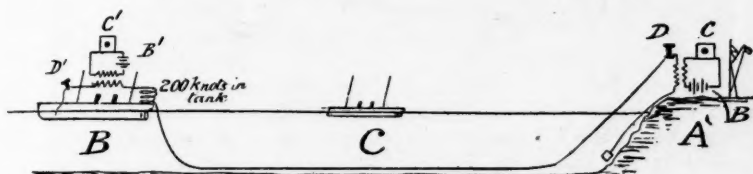
If provision had to be made for harbour manœuvring it would be well to pass the cable over a pulley at the end of a long spanker-boom on the cable-ship, so that it could be swung athwartship to clear the screws if the vessel had to go astern.

#### APPENDIX E.

Inductive telegraphy is a special subject, about which much has been written, and which is still engaging a large amount of attention. With a view to ascertaining the views of two of the leading experimenters in this direction, the following problems have been submitted to them:—The diagram given below shows a land station *A*, which is in communication with the cable vessel *B* 100 miles away, and which has still 200 miles of cable in her tank. A vedette *C*, 50 miles out, wishes to communicate with either ship or shore; will there be any difficulty?

To this Mr. Charles A. Stevenson, of the Northern Lighthouse Board, replied :—"There is no difficulty in another cruiser or vedette communicating ashore, or to another cruiser that has laid down a submarine cable

Diagram 1



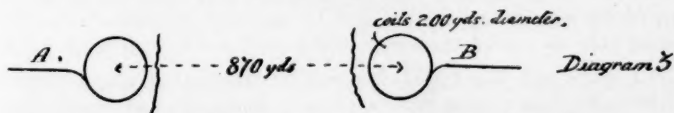
from ashore, at any part of the cable. All that is wanted is that the vedette have a bow connection with the water, and in addition a long tail wire reaching down into the water, working by electrostatic induction. I do not recommend telephonic communication for such a purpose. It is possible that a more effective arrangement would be attained by the electro-magnetic system, by looping the wire thus (see Diagram 2), and



Diagram 2

this I am absolutely certain would work well, as I have tried it; but it is less simple of application in a nautical sense."

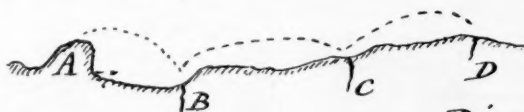
In *Engineering*, October 23rd, 1896, appears a letter from Mr. Stevenson, in which he says :—"Induction from a submarine cable, with currents of but a fraction of an ampere flowing in it, laid in 30 or 40 fathoms of water. . . . is sufficient to make itself audible in a telephone aboard ship, in connection with a proper apparatus costing but a few pounds." Mr. Stevenson's experience in inductive methods of communication is too well known to need lengthy description. It is worth remembering in connection with this problem, however, that he succeeded in bridging a gap without wires, as shown below. Current sent through A, caused induced currents in B, thus maintaining communication.



The following problem was submitted to Professor L. I. Blake :—

A, B, C, D, are enemy's ports, and cable is laid as dotted. Assume a vessel escapes from C heading towards B. The vessels at C are not swift enough to catch her, but if they can advise B she may be intercepted by more powerful vessels. Total length of cable from A to D is 250 miles, and we wish at each position to be

able to communicate with the others. Professor Blake replied :—"While the problem which you propose in regard to communicating between ports while under blockade, contains conditions not yet tried in full, still



*Diagram 4*

the experience which the Light-House Department of our Government here [U.S.A.] has had in the application of the method proposed by me, makes me feel confidence in accomplishing what you desire. I speak hesitatingly thus because I do not like to exceed my experience, but I am assured of the correctness of the principles involved.<sup>1</sup>

"The most difficult question in my mind would be the transmitting of sufficient energy in the form of an alternating current, through a cable of so much self-induction, if iron armoured, as a cable of this length would probably be.

"I found in practice that one terminal plate is sufficient on the ship, as the hull of a steel vessel or the metallic sheathing of a wooden vessel would serve well as the other plate."

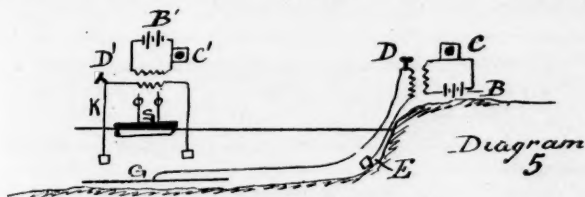
#### INTERESTING DETAILS OF SANDY HOOK LIGHTSHIP.

Prof. Blake adds :—"It is perhaps proper for me to state the experience which we have had in the application of the system off Sandy Hook, N.Y. We communicated telephonically there with a lightship lying six miles from the shore station, and our test plant was in operation some six months. The area of diffusion was about 16 acres, out of which the lightship could not swing. The energy delivered into the grid was exceedingly small, because it was necessarily limited by the power of the telephonic transmitter, and this power did not exceed 4 watts with the best transmitters that I could obtain anywhere or knew of. Had we attempted to telegraph by means of makes and breaks in the alternating current, receiving through a telephone, we could have delivered many fold the energy employed. Our purpose, however, was to allow *telephonic* communication by ordinary men handling the ship. While this is the limit of our practical experience, still, by means of an artificial cable, we seemed able to extend the length of the cable portion very many miles.

"I might add that within this area of diffusion we communicated constantly between moving vessels properly equipped, and could easily overhear conversation between the lightship and the shore station, while we were upon a neighbouring vessel. Of course, any such diffusion area could be secretly known and communication thus protected."

<sup>1</sup> The technical details of the method of carrying out such an installation are also supplied by Professor Blake; but as permission to make them public has not been obtained, they are reserved for the present.

*Notes on Prof. Blake's System of Communication.*—A shore station with B battery, C telephonic transmitter, D receiver, E earth plate. On the



lightship S are similar appliances, similarly lettered, also G grid below. At Sandy Hook the depth of water is  $10\frac{1}{2}$  fathoms.

The equipment on the tender "Gardinia," which steamed about and communicated, cost only a few pounds. In practice, the inventor has found that with a bare copper wire of low resistance (in place of the grid), he could develop the region of communication for about a mile or more along the direction of the wire, and for several hundred feet all around it. See *Electrical Review*, September 6th, 1895.

Other experimenters, amongst whom Messrs. Willoughby Smith and Granville must be mentioned, have also investigated the subject, and sufficient experience seems to have been gained and data made available to justify the assertion that simple strategic lines, from point to point, can be laid; that communication, along the length, by any vessel provided with a simple equipment costing but a few pounds, is a possibility; and, moreover, communicating vessels need not drop anchor or make any continuous metallic connection with the cable.

Such possibilities are interesting in peace-time, but in war-time may render invaluable aid and economise the labours of the vessels used for despatch services; above all, the convenience of instant and continuous communication is too apparent to need emphasising.



As an illustration of a method of communication so simple, it may be assumed that A is a port under blockade. D—E is a cable, and C is a blockading force always in touch with it, such as by a vedette-boat or larger vessel cruising within its radius of induction. It is therefore plain that scouts, say at D, upon sighting any hostile or relieving force attempting to raise the blockade, can fall back upon the immediate neighbourhood of the cable and inform the main body C without loss of time. By the cable, outlying scouts E, can be recalled to strengthen the main body.

One or more cables may be used, or any different telegraphic arrangement made. In event of fog the time saved and service rendered by the cable might be all-important.

*The question of the efficiency and reliability of the systems above described does not materially affect the value of the power to lay a cable at 20 knots, as there is always the direct metallic connection system to fall back upon, and the possibility of a blockading force being able to establish an ordinary station upon an enemy's coast, where effectually covered by the guns of the squadron, or upon an outlying rock.*

#### APPENDIX F.

##### WIRE ROPE INSTALLATIONS—TO SHOW SPEED OF DELIVERY.

On the Schaufhausen system the pulleys are placed from 330 feet to 450 feet apart, whilst the speed of the ropes is 61·8 feet per second. This is  $36\frac{1}{2}$  knots per hour.

The speeds at which wire ropes are commonly driven range between 30 feet and 80 feet per second, and 80 feet per second is 63 knots per hour.

As regards vertical winding in collieries:—In the case of Walsall Wood Pit, No. 1, the maximum speed is reached in 18 seconds, the time occupied in taking the run of 550 yards is 44 seconds, which gives an average speed throughout the run of  $37\frac{1}{2}$  feet per second, the maximum speed being 60 feet per second or over 40 miles per hour. Dead load at moment of starting 142 cwt.

There is little question that the rapid manipulation of the load and accurate stopping required in colliery operations involves careful attention, yet it is successfully effected year in and year out. When therefore we consider that the problem of high-speed cable laying requires no such sudden or extreme variations in speed, but consists essentially of throwing away the cable at a steady speed, a little in excess of that of the vessel, we surely need not despair of success. Further, we have our 2,000 feet of cable in hand as a stand-by for emergencies.

Admiral Sir N. BOWDEN-SMITH, K.C.B.:—Sir George Clarke and Gentlemen, I am very sorry that the lecturer has such a poor audience here to-day, but I can assure him that it is not from indifference on the part of my brother officers to this important subject which he has brought before us, but because the great mass of naval officers are serving afloat. I feel sure, however, that many not present to-day will read this lecture in the JOURNAL with interest. I came here myself more to hear what experts might say as to the feasibility of laying a cable in this proposed rapid manner, and also to know, if possible, what the cost per mile would be for laying such a cable, on the understanding that the cable costs, as the lecturer states, £60 a knot in the first instance. If the proposal were ever adopted, and carried out from a sailor's point of view, I should advocate specially-fitted ships being used for it, instead of utilising any of our vessels-of-war, and I am rather inclined to think that the ordinary cable-ships would do the work for us if required. I know that they have comparatively slow speed; but with such a light cable they might be able to lay it sufficiently fast to suit most requirements. With regard to the proposal to establish communication with an outlying picket of ships unless off a blockaded port, I do not see very much advantage in it, because if you had a group of ships stationed some distance



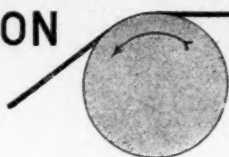
from the land they would probably, by preconcerted arrangements, be required to change their position pretty frequently; and, therefore, anything in the way of a cable going to a certain latitude and longitude might hamper their movements. As regards laying a cable in war-time between two fixed points,—I think it might be of the greatest use, because as the lecturer points out, the enemy at first would not know of its existence, and possibly, therefore, it would not be so liable to be interfered with as those previously in use. With regards to existing cables, I do not think we pay sufficient attention in landing them at some place which would be necessarily patrolled by our ships-of-war or be under our observation. I know many parts of the world where our cables are laid for a considerable distance in very shallow water, where they would be very easily searched for and destroyed. And then they are brought to land hundreds of miles from any military or naval station, where the cable-house, and the instruments, and the shore-end of the cable are all liable to be destroyed by the smallest hostile cruiser.

The CHAIRMAN (Sir G. Clarke):—As Lieutenant Crutchley has nothing to reply to, I will make a few remarks. I am sorry the discussion has not been so well maintained as I had hoped. There are, generally speaking, two policies which have been advocated in regard to the laying of cables with a view to war. One is to lay your cables always in deep water, and bring them to shore as seldom as possible; the other is to lay them in shallow water, and bring them to the shore many times. I believe that the general idea now is that the last course is best for us, and I quite agree with that course myself, provided that the landing-places are on British territory, or on the territory of some neutral Power, which would permit us to control the telegraph stations there established. The risks of a cable must necessarily be very great in war. I do not think that we can calculate upon keeping cables going as they are in peace; it cannot be expected. But we have immense resources for restoring cables; and I think it is to the policy of restoring cables, bridging gaps, and laying new lines that our efforts should point. For us a policy of cutting cables would, as a rule, not be advantageous. There are certain cables—I should not like to specify them—which we must be prepared to cut under certain conditions; but, broadly speaking, our policy is to keep cables going, and it will be the policy of an enemy to cut them as far as possible. Cables can be grappled in water up to 2,700 fathoms, brought to the surface, and cut; but the process is a long one, and always requires specially-fitted ships. As Lord Carnarvon has stated, it is the case that when hostilities were threatened with Russia, arrangements were made for the cutting of certain cables; but the Russians did not appear to have had the appliances or the science required for carrying out the operation, and were obliged to approach a citizen of another nation. The advantages that we have for the repair of cables, and for the laying of new cables, are quite unrivalled. Altogether, I believe, there are about thirty-eight cable-ships in the world with trained crews and appliances thoroughly capable of doing the work, and of those thirty-eight I do not think more than four or five are under a foreign flag, so that we have almost a monopoly of trained men and of fitting appliances for carrying out these special operations. Of course, that applies equally well to cutting operations. If it were our policy we could cut cables with greater certainty and more quickly than any other Power. At the same time, we can produce in England something like 2,000 knots of cable a month, and that rate could be maintained if the supply of gutta-percha would hold out. There is a certain amount of experience of cutting cables in the Peruvian-Chilian War. The Chilians cut a cable which they very easily found, because it was only three miles from the shore; they towed the ends many miles apart; but when it was necessary to repair this cable the trick was found out, and the restoration was very quickly made. But that restoration had to be made by a British vessel—there was neither knowledge nor were there appliances in Chili or Peru sufficient for the operation. During the Zulu war a cable intended for Australia was temporarily laid from

Durban to provide communication. During our occupation of Port Hamilton we also laid a cable with connection to China. Port Hamilton is a place which, in my opinion, we ought never to have given up. I believe that the cable still lies at the bottom of the sea, but it is probably now worthless. When the British fleet went to Constantinople in 1878, arrangements were made for keeping communication with it by cable. Events turned out differently; but the cable would have been of extreme importance in the operations which we might have undertaken. I do not think the importance of rapid communication in war can be possibly be overrated. At a period nearly 100 years ago, just before a certain memorable 1st of August, about two words sent to Nelson would have changed the history of Europe, and very possibly have relieved us from the Egyptian question of the present day. Fleets, I think, will undoubtedly have to take with them in certain cases cable-ships having appliances for laying new cables, putting down branches, and for repairing breaks as they occur; and in the resources which we possess for that purpose I think we have a very great advantage over all other Powers. It seems to me, therefore, that any arrangements, such as the lecturer has proposed, for quickening the operation of laying new cables must necessarily be a great gain. As far as I can see, there is no mechanical objection to the plan which is proposed. I think that the proposal is on the right tack, namely, the employment of power for paying out the cable and making use of a long compensating bight. The arrangement of the paying-out drums seems most ingenious. What I do not feel quite so sure about is the chance of a kink occurring. When you are paying out at a speed of 20 knots if a kink does occur—and I think, looking at the arrangement of the small horizontal drums in the figure a kink might occur—there would be a considerable risk of the cable parting. As regards other questions, and especially the problem which is given under Diagram I., I think it is almost too soon to express an opinion. Science is quite in its infancy as regards what may be done with induced currents. It does seem to me, looking at that diagram, that it would be a little difficult to place your ship right over a cable and to align exactly with it. I do not think as matters now stand, unless the alignment was very true and the ship was very fairly over the cable, that communication could be effected. As regards Diagram IV. in which two blockaded ports are connected with cable, I rather think that it would be better for the blockading ships, if they could maintain themselves off these ports, to cut the cables, and pick up the seaward ends, thus making their communications. I am quite sure we are on the eve of a great discovery in induced telegraphy, and that before long we shall be able to do a great many things which now appear impossible. In conclusion, I think anything which can be done to facilitate cable-communication in war, to make it more certain and more reliable, to bridge over the gaps which are certain to arise, and to lay the new lines which are certain to be wanted, must be of great advantage. With regard to what Admiral Bowden-Smith said, I think he is perfectly right. We have too many exposed cable-landing places, where a cruiser sending a boat ashore, might destroy the instruments. There are too many such cases; but arrangements have been made, to my knowledge, in some places, for giving telegraph stations some measure of protection, and I hope that further preparations of the kind will be made. The destruction of exposed telegraph stations is certain to be attempted in war. I think we ought to be prepared, if such a raid takes place and a telegraph station is destroyed, to at once replace the instruments and restore the communication. I am sure that I speak in the names of all present in expressing our thanks to Lieutenant Crutchley for this most interesting and instructive paper, and in assuring him that we all think that the object which he has brought before us is one of extreme importance to the British Empire.



SECTION  
Nº 1



EJECTING &  
CUTTING  
GEAR

Fig. 1

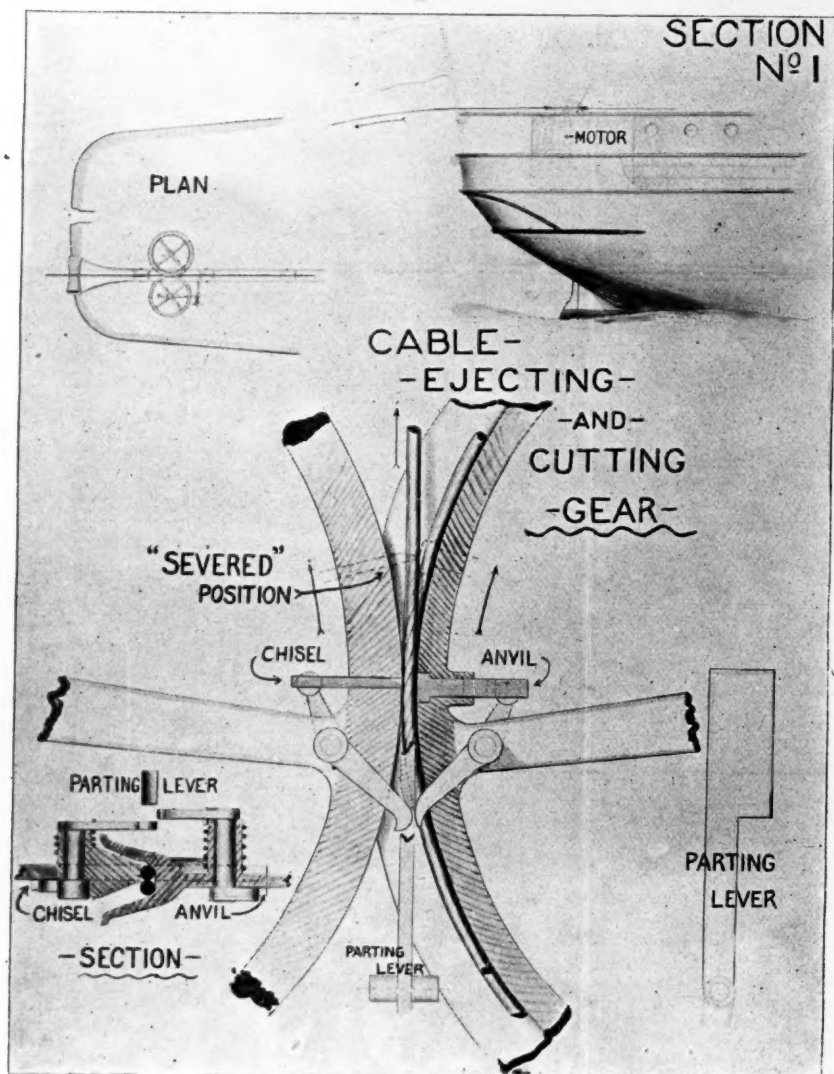
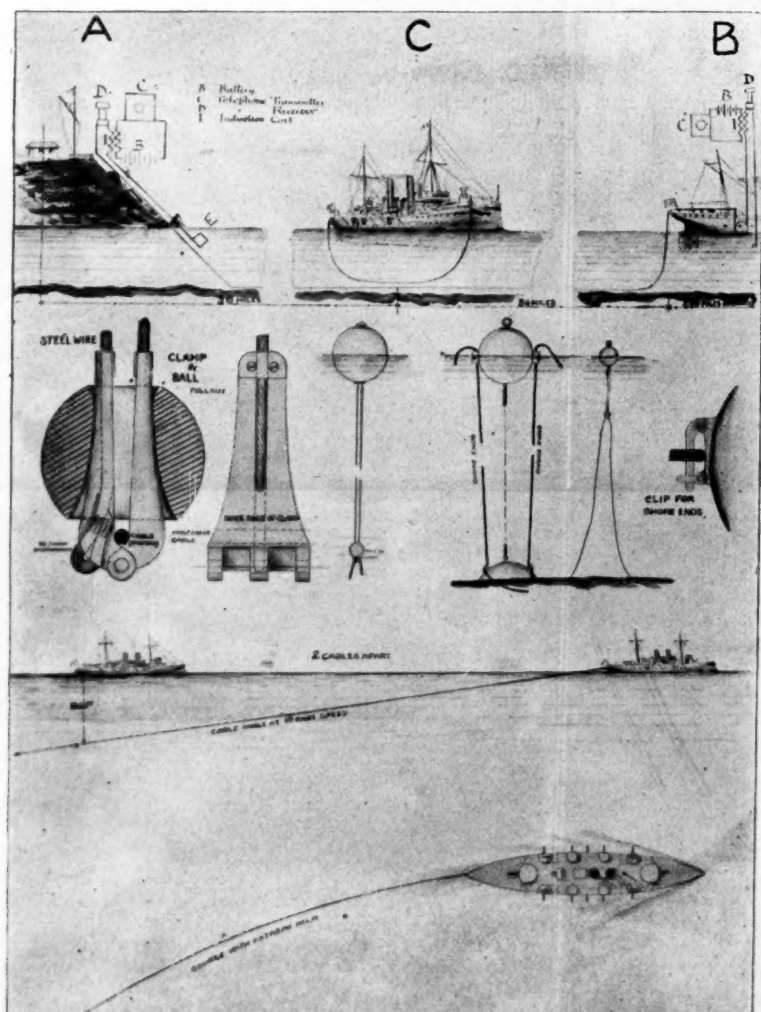


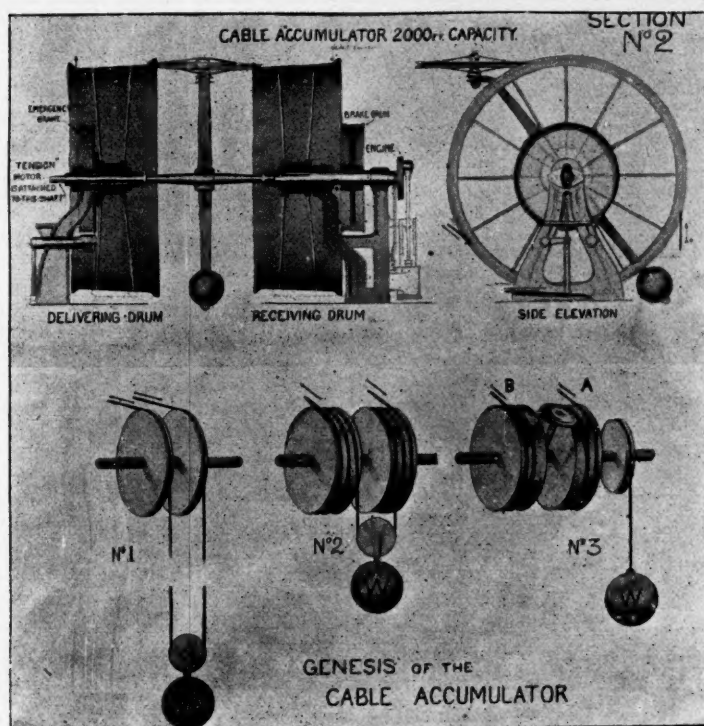
Fig. 5



SECTION  
N°2

HOLDING IN HAND 2000 FT. OF CABLE  
UNDER CONSTANT TENSION  
WITH FREE GIVE & TAKE  
ACTION

Fig. 2





SECTION N°3

A

CARRYING  
—BULK—  
—OF—  
—CABLE—

B

BY LARGE ROTATING DRUM OR A SERIES OF  
—300-KNOTS CAPACITY— 40 KT. UNITS

Fig. 3

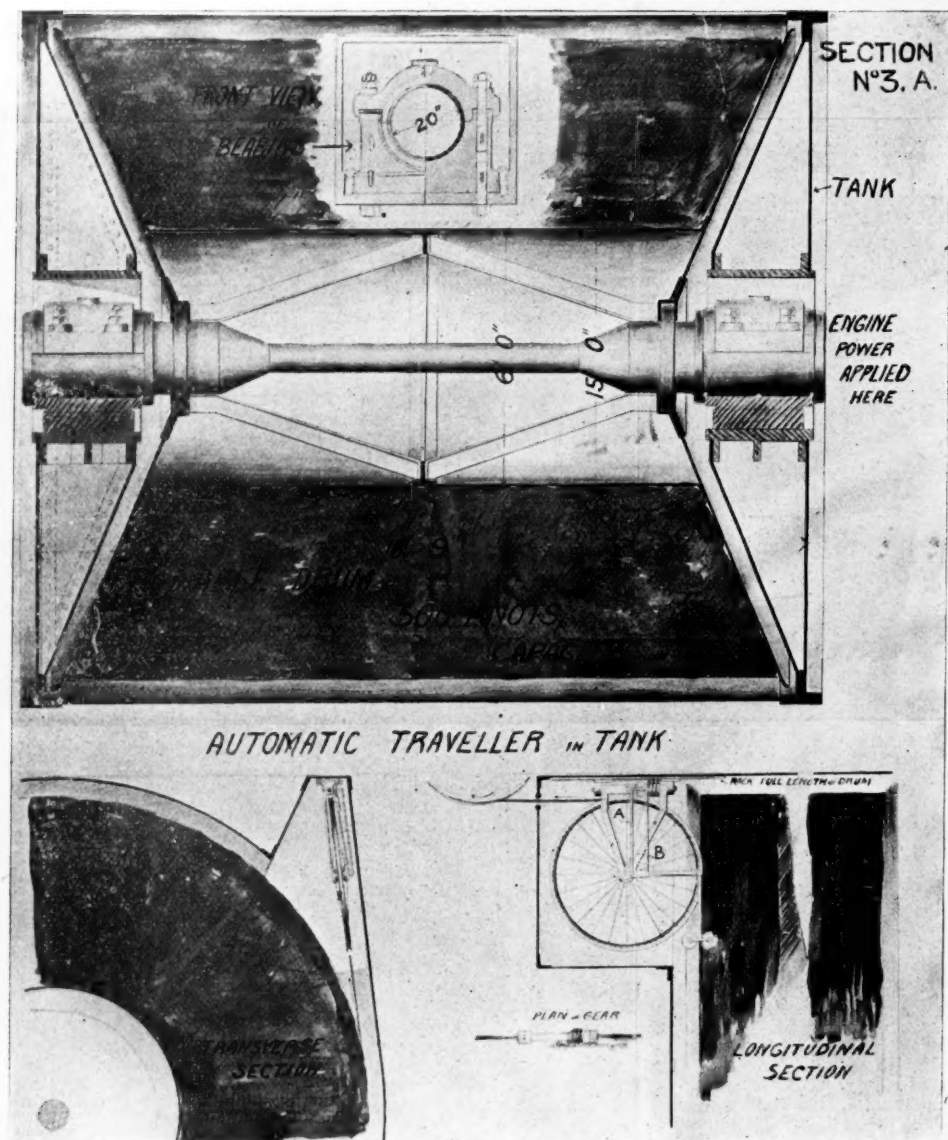
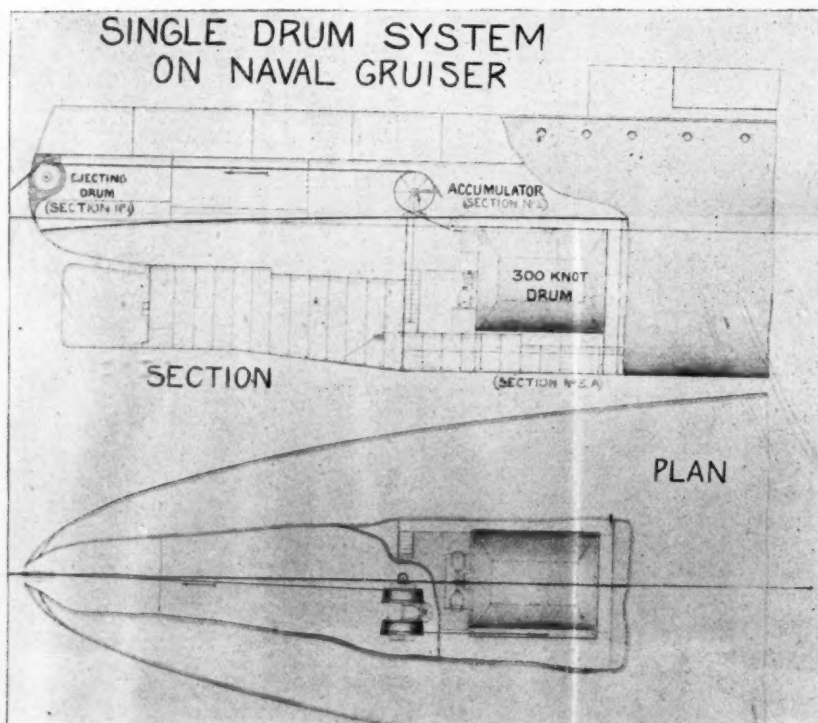
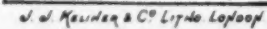


Fig. 6

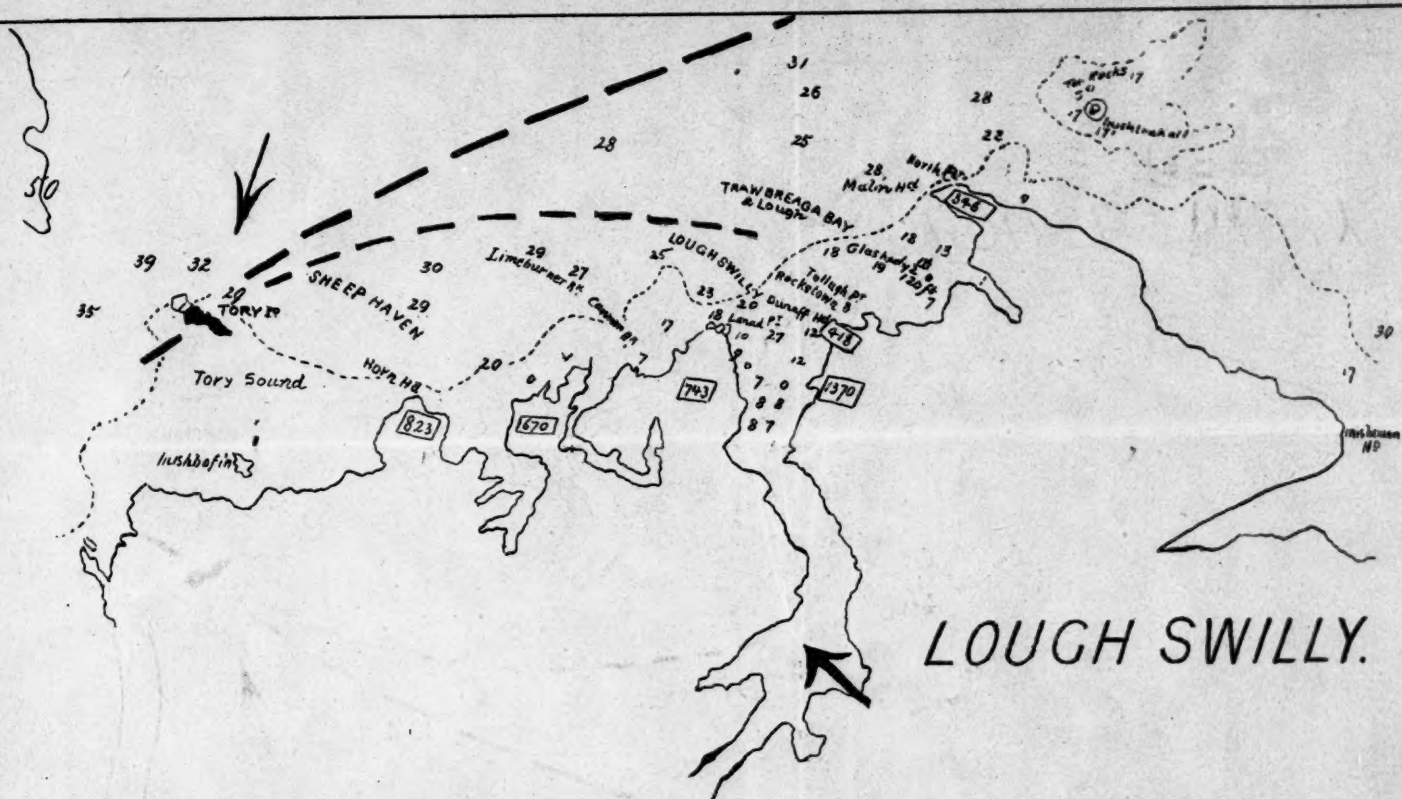




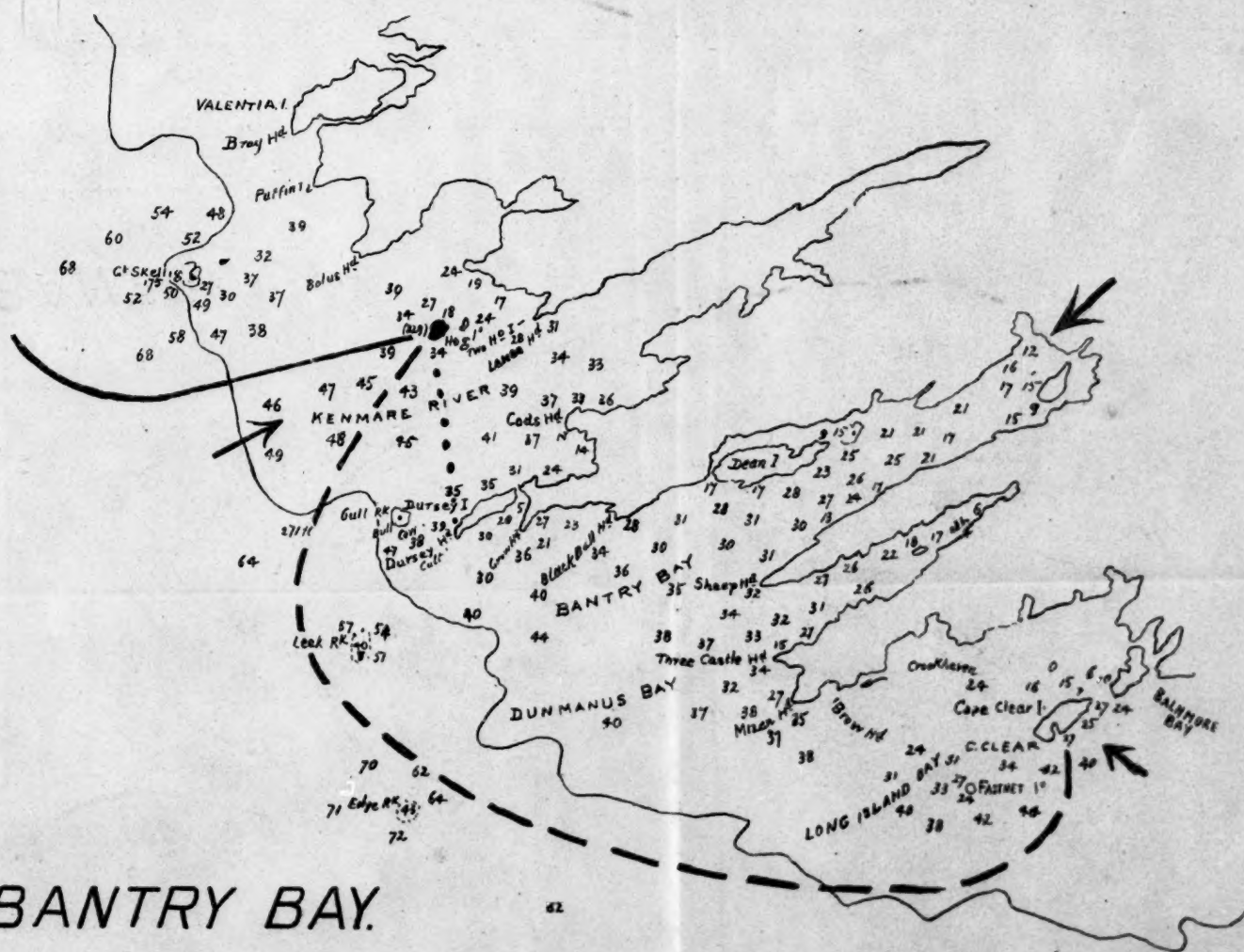








LOUGH SWILLY.



BANTRY BAY.



Note by C. SCOTT SNELL, Esq.:—

Admiral Bowden-Smith remarked: "I am rather inclined to think that the ordinary cable-ships would do the work for us if required. I know that they have comparatively slow speed; but with such a light cable they might be able to lay it sufficiently fast to suit most requirements." Perhaps the following extract from an editorial in the *Electrical Review*, of June 4th (in a review of this paper), will give "expert's opinion" sufficient for the purpose. It runs thus:—"To assist in forming a comparison of methods, we may mention that 8 knots an hour is considered rather a high speed to pay out even 'deep sea' cable, though there have been occasions when, under favourable conditions, 10 knots have been accomplished. So high a speed, however, as 10 knots is considered dangerous, even with very large tanks, and the ship would be slowed down while the cable near to the cone is running out. Were it not for this fact, cable could be laid much faster... but, as before mentioned, the risk of turns fouling in the tank prevents this." I would add that the maximum rate of hand-coiling in ordinary tanks being about 5 knots per hour, it would occupy 60 continuous hours to take in 300 knots of cable; this, by the "small unit" system, could be dealt with in four hours; and, further, what is of equal importance, by adapting the size of the unit to the requirements of railroad transport, it would be possible to load a ship—say at Falmouth, instead of sending her to the Thames—thus effecting a great saving in time, and lessening the war risks. The best protection for a cable from enemy's attack must lay in secrecy as to its existence; or, failing this, secrecy as to its exact course. It is evident that an ordinary cable-ship, by its very appearance, or by its slow speed and necessary escort, introduces grave risks of drawing upon the cable the very attention it is most desirable to avoid. Compared with the rapid passage of an ocean greyhound or other mercantile cruiser (temporarily adapted to the small unit system), which could cover a considerable distance even in the night hours, the disadvantages are very obvious. It will be noticed that the ejecting gear—on the merchant cruiser shown—is purposely carried out by horizontal wheels, so as to be kept out of sight; and if every merchant cruiser trailed a short length of  $\frac{1}{2}$ -inch diameter rope astern, or the cable was coloured grey, there would be little chance of the enemy detecting that any vessel was actually at work; better still, the delivery might be made below the water-line. With reference to the remark of Sir George Clarke that a kink might occur "looking at the arrangement of the small horizontal drums in the figure," I believe I am correct in saying that Sir George was, at the time, under the impression that the drums revolved; probably subsequent study of the figures, with due reference to the description, will, therefore, clear up the misconception. For those interested, it may be stated that further details and descriptions, relating to buoying at full speed, etc., are given in the *Electrical Review* under dates June 4th, 11th, and 25th; and that, during the winter session of the Institution of Electrical Engineers, in all probability the whole technical details of an equipment for a merchant cruiser will be dealt with by a paper thereon. With regard to inductive telegraphy, I think I may justly claim, that whilst its successful introduction would add to the advantages accruing from the use of submarine cables in war, it might still be eliminated, without taking from the great strategic value which would accompany facilities for laying a cable by an ordinary ocean greyhound, at her highest speed. As an illustration, suppose Brest blockaded, in the darkness of night such a vessel might start away, and with her great speed safely run the gauntlet of hostile cruisers loose in the Channel, and land the cable end at Falmouth before daylight. Thus time would be saved in requests for stores, reinforcements, or new gear or repairs—the latter important items in a steam navy; also instant information would be conveyed of coalition changes in Europe, or re-arrangements of hostile fleets, and telegraphic communication with colleagues watching other ports, etc., would be possible. Shall we neglect such advantages?

# THE DEFECTS OF OUR MILITARY FINANCIAL SYSTEM

(1) FOR PEACE; (2) FOR WAR.

*By Lieutenant-Colonel SETON CHURCHILL, A.P.D.*

Wednesday, May 12th, 1897.

General Sir W. GORDON CAMERON, K.C.B., in the Chair.

The CHAIRMAN:—I have much pleasure in introducing the lecturer (Lieut.-Colonel Churchill) to this meeting. Colonel Churchill has, I believe, studied the subject that will be brought before us to-day, "Financial Reform in the Army," for a good many years. I think he wrote an article on the subject in 1880, another in 1894, and another in 1895. He has, therefore, very well considered the subject, having had plenty of time to digest the matter, and to revise or amend anything that may have been erroneous. I am perfectly sure that this meeting—which seems a regular business meeting—will recognise him as a very good authority on the subject. He bears the character of one of the most highly conscientious and painstaking officers in his branch of the Service, and I hope he will meet with all the success he deserves. I am sure he has no personal motives in the matter—his sole object being to benefit the Service.

## PART I.

AS it has been my privilege to travel a good deal on the Continent, I have taken the opportunity of seeing as much as I could of the troops in France, Italy, Germany, Belgium, and Switzerland, and, as far as possible, of studying the financial systems by which the Armies of these countries are governed, and of comparing them with that which prevails in this country. I have also had the advantage of having been in India and in Egypt, where there are two distinct Armies, both managed by English officers, and of seeing a good deal of their financial systems.

On the Continent I have received the very greatest kindness and most valuable help from our Military Attachés, and also from individual foreign officers to whom I got introductions. Lieut.-Colonel Douglas Dawson, the Military Attaché in Paris; Lieut.-Colonel Grierson, who holds a corresponding post at Berlin; Colonel F. M. Wardrop, C.B., our Military Attaché in Vienna; and Mr. Ridgely Carter, the Chargé d'affaires of the United States Embassy, have given me the fullest information on the subject, so far as France, Germany, Austria, and America are concerned. In Italy the Prince of Naples, who was commanding the troops at Florence, and who speaks English well, explained the Italian financial system, and directed three of his officers to take me round different barracks, and show me all the documents in use in connection with the pay of their men. None of the systems are exactly alike, so it has been a most interesting study comparing them with each other, and also comparing them with the system which prevails in the English



Army. I may add that though none of them seem to me perfect, or to be blindly imitated, yet one obtains very good hints by comparing them with each other, picking out their good points, and ignoring their bad ones.

There is, I know, a prejudice against all new ideas borrowed from other countries, though I fail to see the objection, provided that a certain discrimination is shown in the selection. We have the finest Navy in the world, and other nations show their common sense in borrowing ideas from us; though I was somewhat amused to hear that the Chinese, after the recent crushing disasters which happened to their fleet, have decided so blindly to imitate us, that even British grog is to be introduced! They argue that, as we have the finest Navy, and as we issue grog, therefore they have only to do the same, and to hope for similar results. I have a fraternal interest in the Navy, as I have a brother commanding one of our largest ships in the Mediterranean, but I have never heard him attribute our supremacy at sea to this cause mentioned. I submit, however, that it is well to study those parts of the systems of the Armies and Navies of other nations, to enable us to see how far certain improvements can be adapted to our own system, as no branch of the Army is so perfect that it cannot be improved.

In the limited time allotted to me, I shall be unable to go into the details of the systems in foreign Armies, as such would occupy a whole lecture. Some day I hope to deal with the subject in a separate article. In this lecture I propose to confine myself to the English Army, merely alluding now and then to others. In comparison with Continental Armies, I am convinced that, so far as material is concerned, we in England have nothing of which to be ashamed, and I venture to think that it is to this cause we must attribute the fact that in our Army we have less dishonesty and speculation than in any Army in Europe. But while our material is undeniably the best, it appears to me that our system is bad and ineffective, and is, I believe, the cause of much of the costliness of our small Army. Though ours may be the worst system, yet as the material on which to work is the best, the defects could easily be remedied, so that the country and the Army would materially gain thereby.

During the last few years almost every part of our Army has been reformed and brought into touch with the age in which we live, the only exception being our military financial system. But though certain improvements have been introduced within recent years in finance, I would respectfully submit that we are still very far short of what we ought to be, considering that over £308,936 are spent annually upon our financial officials.

In this lecture, pleading for improvement and progress in my own branch of the Service, I am anxious not to transgress the limits of respectful and legitimate criticism. No human systems are perfect, and I fully recognise the fact that it is easy to criticise any system. There is, however, a fair and legitimate spirit of criticism which cannot but be conducive to the healthy welfare of the system to which it is applied; as there is also a captious, fault-finding spirit, which cannot but do much

injury. My desire is to direct attention to those points wherein our system appears to me to be defective, and leave it to the authorities to decide how far I have been able to prove my case.

The defects of our existing system appear to be as follows :—

1. It is costly.
2. It is ineffective during peace-time.
3. It is not adapted for war either on a small or large scale.

I venture to think that it would be possible to introduce a better system at a lower cost, and at the same time so to raise the whole tone of this branch of the Service, as to attract superior men both into the administrative and the executive, without injuring the prospects of a single officer or civilian now connected with military finance.

To take the cost first. When the recently reduced establishment is reached, the numbers and cost will be as follows :—

26 Higher Division Clerks at the War Office	}	£
212 Lower " " " "		53,415
208 Officers of the A.P.D.	}	
590 Army Pay Corps -		
121 Pensioners, Civilians, etc.		184,030
19 Clerks at an average of £100 each for Army Agents - - - - -		1,900
1,176		239,345
W.O. Superannuation - - - - -		15,000
Non-effective A.P.D. and A.P.C. - - - - -		54,591
Total - - - - -		£308,936

Roughly speaking, we have 1,176 officers and clerks engaged in financial work, costing £308,936. Of this number there are 26 War Office civilians ranking as officers, and 208 officers of the Army Pay Department, making a total of 234 individuals with the rank and pay of officers, and 942 clerks civil and military. As we do not require 234 of the grade of officers that number might be reduced to 200, as I shall endeavour to point out, by the adoption of a better system, and the clerks might be slightly increased from 942 to 1,000. At present we have too many officers and too few clerks, the consequence being that highly-paid officers often have to do work that in other Armies would be done by a clerk. One officer can very easily superintend five clerks on an average; we should then have 1,200 individuals engaged in finance, as opposed to the existing 1,176, yet a saving would be effected of something like £22,386 per annum. The work would, as I hope to show, be better done during peace-time, abler men would be attracted, and a larger percentage of officers and clerks would be available for active service.

Briefly stated, the existing system is that the 208 officers of the Army Pay Department do all the executive financial work abroad and at home, get all the hardships and the bad climates, the campaigning and the dull stations, but none of the plums. These latter are distributed

among a small band of some twenty-six War Office civilians who do the audit, and hold all the highly-paid administrative posts at the W.O. As far as I can gather, none of the Armies on the Continent or in India work on such peculiar lines. This dual system of controlling military expenditure is a very defective one, and has all the disadvantages, but none of the advantages, of having all our financial officials either exclusively civilians or exclusively military men. It is obvious that we cannot have them all civilians, for not only would they be too costly, but they would be ill-adapted for campaigns or for foreign service. I, therefore, hope to show that the only logical conclusion is to have them exclusively military men, as is already the case in most of the Continental Armies, as well as in India. In order, however, to respect vested interests, let all the military men and civilians now engaged in this branch of the service be united into one financial staff corps, and, as vacancies take place, let them be filled exclusively by military men, who shall, as in the Indian Military Accounts Department, be called upon to pass a good stiff examination. The following is the establishment that might be fixed upon:—

<i>Officers.</i>				£	£
1	Major-General at the War Office	-	-	1,500	
1	Deputy Accountant-General	-	-	1,200	
3	Assistant Accountants-General at £1,000	-	-	3,000	
25	Colonels at £800	-	-	20,000	
25	Lieut.-Colonels at £600	-	-	15,000	
25	Lieut.-Colonels at £550	-	-	13,750	
30	Majors at £500	-	-	15,000	
30	Majors at £450	-	-	13,500	
30	Captains at £400	-	-	12,000	
30	Captains at £350	-	-	10,500	
					105,450
200 Officers.					
<i>Clerks.</i>				£	
20	Quartermasters at £300	-	-	6,000	
20	Quartermasters at £250	-	-	5,000	
60	Sergeant-Majors at £160	-	-	9,600	
100	Quartermaster-Sergeants at £140	-	-	14,000	
100	Quartermaster-Sergeants at £130	-	-	13,000	
100	Staff-Sergeants at £120	-	-	12,000	
100	Staff-Sergeants at £110	-	-	11,000	
100	Sergeants at £100	-	-	10,000	
100	Sergeants at £90	-	-	9,000	
100	Corporals at £80	-	-	8,000	
100	Corporals at £70	-	-	7,000	
100	Probationers at £60	-	-	6,000	
					110,600
1000 Clerks.					
Extra pay to Adjutants at Depôts				-	2,500
Non-Effective Vote				-	68,000
Total				-	£286,550

N.B.—This includes charge pay and allowances, deferred pay, etc., but not postage or travelling expenses.

Not only is our financial system a costly one, but I venture to think that it is ineffective for peace-time, and that an enormous percentage of our accounts are not properly audited, owing to the fact that the civilian staff at the W.O. is not numerically strong enough to cope with the work. Although all the accounts of every business firm in England are carefully audited, yet in the Army not more than about one-third of the whole are now audited in detail. It is a temptation to a slack or dishonest paymaster to know that the chances are two to one against his being detected, and it is surprising how the Auditor-General at Somerset House can express himself, in his Annual Report to the House of Commons, as satisfied with the existing arrangement, if he knows of this new plan which has recently crept in, since the introduction of monthly, instead of half-yearly, pay lists. Some few years ago a defective plan existed by which military accounts were rendered only half-yearly, consequently paymasters had five months' idleness, and were overwhelmed with work in the sixth month. Realising what a very serious evil this was to the Army at large, although it saved the W.O. civilians trouble and work, the attention of the late Mr. Stanhope, then Secretary of State for War, was directed to it. He at once had this defect removed, and directed that, as in India, all military accounts should be rendered monthly. This fair distribution of the work over six months has slightly increased our work, but it is a much more satisfactory arrangement in the interests of the captains of companies, and of the individual men under them. But though this plan has only slightly increased the work of the executive, it has very seriously increased the work of the W.O. civilian auditors. Instead of auditing one pay list in six months, they have now to audit six pay lists in that period. This would have necessitated a considerable increase of their staff, but this they could not ask for, because they know that the public does not approve of so much money being spent on civilians who are not available for war. The consequence is that the unsatisfactory plan has been adopted of not auditing all our accounts. Work as hard as they can under the existing system, they cannot audit more than a limited number of pay lists, and so have to trust us for the rest, a plan—complimentary though it may be to us—I venture to think highly unsatisfactory, in the interests of the public, as it puts a great temptation in the way of a slack or dishonest paymaster. The real danger, however, is that it may lead to collusion between dishonest clerks in a pay office and pay-sergeants of companies, and which, sooner or later, may result in some serious scandal. This defective system is a strong proof that our existing dual system of controlling the finances of the Army by a mixed body of civilians and military men is ineffective for peace. So long as this dual system is maintained, it cannot be remedied without the expenditure of a larger sum of money on civilians who are not available for war, than is compatible with the public interest.

There is, however, one remedy which will cost nothing. It is obvious that during peace-time there must be in every Army an establishment kept up in training for, and capable of, expansion to meet the contingencies of war. This is as true of the financial as of any other branch.

Yet during peace-time our accounts are not being properly audited. Let us decentralise this huge overgrown branch and transfer the audit from the W.O. to the General Officer in command of each district, and the remedy could then easily be introduced without any extra cost. The General has under him a Chief Paymaster, who ought to be made his Financial Staff Officer, and who would, with a competent staff of officers and clerks, be more capable of auditing all the accounts of his district than any W.O. clerk. In other words, if we adopted the plan which exists in every bank, of employing the senior men to audit the work of the juniors, and such seniors are the most capable men for the work, we should find suitable training during peace-time for the number of officers and clerks who have to be maintained to meet war requirements. Speaking generally, this is the plan adopted in India, in Egypt, and by most of the Continental Armies. We spend the sum of nearly £310,000 per annum on our financial officials, and I submit that it is a sound principle to contend for, that during peace-time we should obtain as much benefit as possible out of the extra establishment kept up for war. We may be a rich nation, as compared with others, but that is no reason why we should fritter away money on non-combatants which might be better spent on increasing our fighting efficiency.

There is, however, another serious defect in our existing system. The administrative part of the work is entirely in the hands of a small body of twenty-six W.O. civilians, so that when a vacancy takes place in any of the higher ranks, the Financial Secretary is compelled to fill it from this very limited number, although he may be conscious all the time that there are far abler men among the 208 military officers of the A.P.D. At present, if we had a born financier, such as Mr. Goschen, in the A.P.D., he could not possibly rise to hold the position of an administrator of finance, and the War Office could therefore make no special use of him. The twenty-six W.O. civilians, therefore, become a small body of monopolists, and there can be only a very limited competition among them. At the present time we happen to have very able men in the higher civilian posts, but when promotion or the age clause removes them we have no guarantee that we shall have equally able men to replace them. We certainly have not always had able men in the past, and the chances are less now than ever in favour of able men rising to the top, owing to the fact that the field of selection has recently been reduced considerably. In olden times there were over fifty W.O. civilians engaged in finance, but now their numbers are reduced to twenty-six, and the smaller the field of selection the smaller are our chances of getting good men at the top. Even fifty officers in two battalions do not always produce a good commanding officer, and officers from other regiments have sometimes to be brought in. But the Accountant-General of the Army and his assistants, who ought to be very able men, are selected from a much smaller body. The defect of the existing system is that for all the higher posts the officials must be selected from the twenty-six higher division clerks of the W.O. The advantage of the proposed plan will be that the selection would be made from a much larger body,

consisting of at least 200 officers, all of whom have had great experience in the practical working of the machine.

Another advantage would be that we should have no financial men in the W.O. who are not quite up to the mark. On the military side of the W.O. every individual is a selected man; but it is not so on the financial side. A man may pass a good examination when young, and yet turn out to be anything but a practical official; but there is no way of getting rid of such a man on the financial side of the W.O., so they remain on in the establishment, to the detriment of the public service. If all the financial posts in the W.O. were filled from a large Financial Staff Corps of, say, 200, only selected officers could enter the W.O., and if they did not do well their appointments need not be renewed, as there must be plenty of less responsible posts outside the W.O. to which they could be relegated.

It has, however, been urged that if the W.O. civilians failed to produce a tip-top man to fill the post of Accountant-General, who is now paid £1,800 per annum, that we could easily obtain such a man from the Treasury. Whoever invented such an argument must have been not only very hard up for a better one with which to prop up a defective system, but he must have been painfully wanting in any sense of humour. It is difficult to understand anyone seriously contending that a large branch of the military service, on which over £300,000 is expended per annum, should be incapable of producing its own head, and have to be indebted to another Government branch of the public service for an official to conduct its affairs! It might be very creditable to the Treasury to have an able man ready for the occasion, but it certainly would not be very creditable to the Army that, owing to its defective system, it had failed to produce such a man for its work. However able a man might be who might be lent to the W.O. by the Treasury, it would take him many years to obtain a proper insight into the financial wants of the Army. Meanwhile he would not be a very valuable adviser to the Secretary of State for War. If, however, one united Financial Staff Corps existed, composed of at least 200 educated, practical officers, experience in other branches shows that such a number will never fail to produce a really able man for the occasion.

I have not a word to say personally against W.O. financial civilians. If we must keep them up as a distinct body we could not get better men. But if they were ten times better and abler men than they are, the evils would still continue to exist. They are inherent in the system, and not due to individuals.

There will always be found some to defend that which exists, for no other reason than that it does exist. It is, however, very difficult to see the *raison d'être* of the little band of the twenty-six W.O. civilians connected with finance, now that competitive examinations have introduced quite as able men into the military service. In its control of the Army the House of Commons appoints a Secretary of State for War, an Under-Secretary of State, and a Financial Secretary, who are responsible to it for Army expenditure. These three, of course, come quite new to



their work, and, instead of surrounding them with the picked specialists of the British Army, who are well-up in every detail of the Service, we interpose a third body of W.O. civilians who never leave Pall Mall, and never can have much personal experience. They are out of touch with the Army, and only know their work in a theoretical way. They can only speak from hearsay, and can never carry the weight of personal experience. Surely our M.P. authorities should obtain their information first hand, and not from those who have themselves to be prompted by others.

Personally I cannot believe that there is anything in the statement that Parliament insists on interposing a body of civilians between themselves and the Army. Parliament is the "bogie man" with which those who are interested in maintaining existing abuses endeavour to frighten would-be reformers. The late Lord Randolph Churchill, who was a member of the Hartington Commission that reported in 1890 on the reform of the Army, says very truly :—"Parliament is made the scapegoat for defective administration. The control of Parliament, the interference of Parliament, the jealousy of Parliament for its rights and privileges, these are the stock arguments in favour of an adherence to the main lines of our present system of naval and military administration. Personally, and speaking with some experience of the House of Commons, I put aside arguments of that kind. I have arrived at the conclusion that, eliminating great party issues, the House of Commons, with respect to the transaction of ordinary public affairs, is an assembly mainly composed of business-like and reasonable individuals, who, having to find certain funds for certain purposes, desire in the main that the pecuniary demands of Government should not be obviously excessive, and that fair guarantees should be given for economical expenditure of the funds provided."<sup>1</sup>

The truth is that before the days of highly competitive examinations financial civilians were once a necessity to the Army, but now that officers are better educated this necessity has passed away. Excuses, however, have to be made for their continued employment, and if good ones cannot be found bad ones have to be substituted. I question very much if the public realise the fact that we have a double system of civilian financial control, once in the War Office and again in the Treasury, and no military financial control at all. Surely it would be better for the country, as also for the Army, to have a military financial control in the War Office and a civilian financial control in the Treasury, so as to get the full benefit of the brains of both bodies.

In defence of the existing defective system, it has been asserted that one advantage of having civilians is that we thus secure some permanent officials in the W.O. Now, while there can be no question as to the advantages of having a permanent element in the W.O., as also in all large offices outside that building, it would appear that we are purchasing that advantage at a very high cost, by injuring the rest of the financial

<sup>1</sup> Memorandum by Lord Randolph Churchill. Published with the Report of the Hartington Commission on Army Reform, 1890. P. xv.

branch of the Army; and surely it must be possible to secure that element of permanency in a better and in a more reasonable way. While fully admitting the advantage of having a more permanent element than the military man, who changes every five years, it is not obvious why the permanent officials should be at the top. In the military side of the W.O. we find the military men at the top, and the permanent officials under them. Why not let us introduce men of the rank of quartermaster, who shall be the permanent head clerks under the officers holding the higher appointments? We shall then have all the advantages of the permanent element without losing the advantages of having fresh blood introduced at the top every few years. Permanent officials at the top are apt to become very conservative, and to frown down all new ideas; but permanent officials, when subordinate, in the position of head clerks, are most useful to hand on all traditions. They are not so senior as to be able to block progress, but they are sufficiently in touch with the authorities as to be able to keep them from making blunders of great magnitude.

It has already been shown that we should obtain by degrees an abler body of officials at the W.O. if the selection for all the higher posts were made from a wider field of some 200, instead of from the restricted number of 26 civilians. But on the principle of "killing two birds with one stone," it would be found that we should also obtain a far abler body of officers in the executive branch of financial work, if all the rewards of the Service, which have hitherto been kept exclusively for one small body of men, were thrown open to the executive. These 26 civilians are now holding all the higher appointments, having salaries as high as £900, £1,000, £1,200, and even £1,800, whereas no officer in the A.P.D. has more than about £774. One W.O. civilian has a K.C.B., and another a C.B., which they have justly earned for financial duties; but not a single K.C.B. or even C.B. has been given to any of our military financial men now serving. Good military men, who have an aptitude for finance, are not encouraged to join the financial branch, on account of this incongruity, and on account of the fact that they have to serve in an inferior position to the civilians. Able officers naturally resent this treatment. The existence, therefore, at the W.O. of civilians means inferior men in the executive. Whatever the supposed advantages may be of having a small band of civilians, who absorb all the higher-paid posts in military finance, its defenders must be prepared to show that it is very great, since the public is paying a very high price for it, because unquestionably it is the cause of preventing a better class of officers from joining the executive. So long as these civilians exist, so long will this branch of our Army be discredited. We see this by comparing the two Armies serving under the Queen. The one in India has no W.O. civilian element, and from top to bottom the financial branch is officered by military men. Consequently in India the Military Accounts Department is not discredited, but attracts some of the best men out there, which is not the case in the corresponding Service in this country. The only wonder is that we do manage to secure as good men as some that we have got.

The time was when the Engineers branch of our Army was looked down upon as a civil one, but now the Royal Engineers are looked upon as one of the highest branches in the Service. But would this be so if all the best appointments in the W.O. were retained as the exclusive monopoly of a body of civil engineers? There are able civil engineers who might serve, but there can be no question that such a method would produce a very inferior body of military engineers. Good men would be repelled, and only inferior ones would enter the Engineers. There would be friction between the civil and military engineers, and the public service would suffer. The authorities have very wisely guarded against this, by allowing the Royal Engineers to manage their own affairs, and by acting on the common-sense principle that those who have had the carrying out of the details are the best men to conduct the administration. Those who have worn the shoe know best where it pinches.

Considering under what peculiar and varying conditions the British Army is serving, it is most remarkable that we have absolutely no system by which we can watch expenditure and detect waste. It is quite ridiculous for a civilian Accountant-General sitting in Pall Mall to think that his eagle eye can detect every error. He would need to be an Argus with at least one hundred eyes to be able to look into every nook and corner where sections of the British Army may be quartered. Yet all this time we have a well-paid body of officers in the Army Pay Department, stationed in every part of the world, who could, each in his own individual capacity, be an eye to the Accountant-General, and thus at once make him an Argus. In other words, we need a department consisting of men who will not only be accountants issuing money all over the world, but will be professionally interested in keeping down expenditure, and detecting waste. In theory this duty now devolves on the commanding officer in each station, who has had no special training for this work. His promotion is not dependent on finance, and often he knows nothing about it, and cares less. We have no need to increase the number of our financial officers, nor to pay them better. The number of the officers is at present more than sufficient, and the money spent on the Financial branch of the War Office and on the Army Pay Department, is more than enough for our existing wants. Financial officers have to be well paid, as it is most important that those who handle money should themselves be beyond suspicion, and, speaking generally, they are well paid. Let the existing dual control system be abolished, let one branch be formed, let every individual in that branch know that his promotion is dependent on his merits as well as on his capacity to keep down expenditure and to point out waste and extravagance, and very soon we shall have men of merit coming to the front, pointing out, in well-considered schemes, where money can be saved and where extravagance can be abolished.

Having attempted to show that the plan of manning our existing financial branch with a heterogeneous mixture of civilians and military men is defective, it remains only to plead for the one logical conclusion at which one can arrive. The system that has already been adopted in

the case of the Royal Engineers, the Army Ordnance Department, and the system which is in existence in India, in which country the financial branch is exclusively officered by military men, is the only one left, and there never will be really efficient audit and economical treatment of Army finances till there is one united financial branch in the British Army, as there now is in the Indian Army and in some of the Continental Armies. The question to be decided is, not what is best for individuals, but what is best for the Army. The system which attracts the most intelligent officers will be the best for the financial branch, and there can be no question but that it will be also the best for the Army. Let us ever remember that a good system which attracts the best financial officers is the truest friend to the combatant officers, as on our financial officers depend the decrease of waste and extravagance and the consequent increase of real fighting power. I am sanguine enough to believe that we could considerably increase the number of our fighting men without asking for any more money if only we had a better financial system.

## PART II.

I have attempted to show that our existing financial system is not adapted for peace, but I also venture to maintain that it is still less adapted for war, whether conducted on a large scale or on a small one. The General Officer Commanding in a campaign has a great deal too much to do to enable him to give much time to financial questions, and yet these play a very important part. The raising of money, the conveyance of treasure, the sufficient supply of money at exact spots necessary to meet the demand, the fixing of rates and extra allowances, the audit of accounts, checking extravagance, and putting a stop to dishonesty among subordinates and contractors, are all very important questions. A campaign under any circumstances is a costly affair, but a good financial adviser to the G.O.C. can do a great deal to reduce the expenditure. It is very poor economy for a country to under-pay its financial officers, as it means getting inferior men. A General Officer in command requires the very best man the country can give him to think out little details and to act for him in these matters, in the same way that his chief Royal Engineer officer does in his department of work. But all the highly-paid posts connected with military finance are held by civilians, and these are not available for active service. The financial adviser of the G.O.C. would be a man drawing only about £700 per annum, though there are many civilians above him drawing annual salaries of £900, £1,000, £1,200, and even £1,800 per annum. If we may judge of relative merits by the relative salaries, he would by no means have the best man the country could provide to be his financial adviser.

But this is not the only evil. The chief paymaster, who would be sent out under the existing system, would be a man who would have absolutely no experience of the inner working of the War Office, as there is not a single chief paymaster employed in the W.O. Consequently he might unintentionally give advice, which would be exactly contrary to the wish of the authorities at home.

Under the existing system a very serious defect on a campaign is that all accounts have to be sent home for audit, and often long delays take place before questions are settled, which is of great inconvenience to officers, men, and others concerned. Surely the G.O.C. on the spot, acting through his financial staff officer, should be able to conduct all audit, and to settle everything at once; and very few cases ought to be submitted to the W.O., and those that are should be only questions of great importance, to be dealt with by the authorities, and not by a civilian clerk who has had no experience of these matters.

In order to adapt our system for war a certain number of the selected officers of the Army Pay Department should, as in other branches of the Service, be learning the inner working of the machine at the W.O., and, on the other hand, the system of each district should be adapted to the system that would be required in the event of war; then we should be utilising peace-time to prepare for war, which we are not now doing, so far as finance is concerned. Let each General Officer commanding a district have authority given him to settle, as on active service, all petty financial details, and to carry out the complete audit of all the accounts of his district. This duty would of course be done by his chief financial staff officer, and thus a large number of financial officers would be qualifying to become at once good financial advisers to generals, who, in the future, will be called upon to conduct the operations of a great campaign. Any system of headquarter inspections considered necessary could be carried out as in other branches of the Service.

Another very serious defect of our existing system is that, though we have upwards of 234 individuals drawing the high pay of an officer, we could not actually send out to a campaign more than about 70, or under 30 per cent. Even for present purposes that would be little enough for an army of 100,000 men, and we are allowing ourselves little or no margin; but if, as in the war with Russia, the campaign become a prolonged one, how are we to supply substitutes for those who fall sick, get invalided, etc.? I understand that for every 100 officers serving in the Crimea there were over 200 sent out during that prolonged war. Paymasters are elderly men as a rule, and a large percentage would break down from hardships, bad climates, etc. Many would require six months' leave of absence on return home, and so they could not take the place of the officers sent out to relieve them. It is not difficult to imagine that circumstances might arise which would compel us, against our will, to utilise the whole of the 300,000 British troops that we now have, including the 80,000 in the Army Reserve and the 73,000 English troops in India, leaving England and all our coaling stations to be manned by volunteers from the Militia. As a matter of fact, some of the Militia did go to the Mediterranean in the Russian war. So long as we have the men, even if we have not the correct proportion of each arm of the Service, and the proper machinery, our national pride would prevent us from withdrawing without credit from a war when once engaged. But our existing financial system as at present constituted could not possibly stand the strain, and yet we could,



without having to spend an extra penny, easily adapt our machinery to enable us to cope with such a state of affairs without the slightest chance of a breakdown. Our financial system is a very *expensive* one, but it is certainly not a very *expansive* one. By a very slight change we might make it less expensive and much more expansive, if, instead of scattering paymasters about in units over all the country, we were to concentrate them at the headquarters of each district. We should thus become far more effective for active service, and be able to have at hand a far greater percentage available for the scene of action on a great emergency arising, instead of trusting to the chapter of accidents in the hope that the demand may never occur.

Out of 1,176 persons engaged in military finance, the only officers and men actually available for active service now are the 208 officers, of the A.P.D., and the 590 clerks of the Army Pay Corps, and these are scattered about in 103 different stations. The following analysis of the A.P.D. officers will perhaps assist in making the case more clear:—

<i>Officers.</i>					<i>Available for Active Service.</i>	
63	Paymasters in Offices with only 1 Officer	-	-	-	Nil	
34	" " " 2 Officers	-	-	-	17	
24	" " " 3 "	-	-	-	12	
28	" " " 4 "	-	-	-	14	
10	" " " 5 "	-	-	-	5	
12	" " " 6 "	-	-	-	6	
7	" " " 7 "	-	-	-	3	
16	" " " 8 "	-	-	-	8	
10	" " " 10 "	-	-	-	5	
4	Paymasters unattached	-	-	-	4	
208 Total in A.P.D.					Available for Active Service	74

As it is obvious that in a single-handed office no one could be spared for the seat of war, and in an office where there are two, only one could be spared, and so on, it is a mere matter of calculation to see that 208 officers, as at present arranged, could at a push, if none were sick, only supply about 70 officers, which would be less than 30 per cent. of the 234 officers and civilians receiving the pay of an officer. This I submit is totally inadequate for the possible needs of the British Army, and no system can be considered satisfactory that could not at a great push send as many as 75 per cent., or 150 officers, with a corresponding number of clerks.

Instead of scattering paymasters about during peace-time at different stations whence they cannot be removed in the event of war, as there would be no one to take their places, let all the paymasters be concentrated at the headquarters of each district, that is about fifteen large centres at home and twelve small ones abroad, so that at once 30, 50, or 75 per cent. could be sent off, and yet let the work go on without any break, those being left behind supplemented by the few A.P.D. officers from the Reserve List. Financial is unlike medical work, as in the



latter, there must be personal attendance, but in financial work everything during peace-time can be done by means of the penny post. Take my own case as an example. The great bulk of my work is now done by post. Roughly speaking I have nearly 3,000 Army Reserve men and pensioners to pay quarterly, so that about 28,000 letters or documents come to my office, and similarly leave the office every year, of which 12,000 contain money. In addition there are about 1,200 recruits per annum raised in my district, there are eight depôt companies, and a battalion of eight companies, two regiments of Yeomanry, four battalions of Militia, and five battalions of Volunteers. By far the greater amount of the work is already done by post, and what remains is mere child's play, and could just as easily be done in the same way. It does not matter to the recipients of the letters whether they are posted at my particular station, or at the headquarters of the district. If this could be done in a double regimental district, which is one of the largest in England, it could, of course, be done even more easily at the many smaller regimental districts, which in the aggregate absorb so many paymasters. A few trifling items might, as in battalions of infantry and regiments of cavalry, be paid by the adjutant of the depôt, giving him the extra 2s. per diem, which is now given to adjutants of battalions.

On the principle of *ex uno disce omnes*, I will now proceed to show how this system would work in my own particular district, the North-Western, which has its headquarters at Chester. There are in the district seventeen officers of the A.P.D. Ten of these are at stations single-handed, and not one of them could be removed to the seat of war, as it would take them all they know to enable them to cope with their work if the Army Reserve, Pensioners under fifty years of age, Militia, Volunteers, and Yeomanry were called out. There are two depôts with two officers of the A.P.D., each of whom could spare one, and there are at the headquarters of the district three officers. Only one of these could be spared, so that out of the seventeen only three in all could be sent to the seat of war, which is not one quarter, whereas I submit that at least 75 per cent. ought to be available at a push.

If all the financial duties of the N.W. District were concentrated at Chester, they might be divided into the following five sub-divisions, though I think that this is one of the districts in which there might be a considerable reduction in the number of the financial officers.

- |    |                     |  |
|----|---------------------|--|
| A. | 1 Colonel ..        | } To perform the entire audit of the district—<br>the work now done at the War Office. |
|    | 1 Lieut.-Colonel .. |  |
|    | 1 Major ..          |  |
| B. | 1 Lieut.-Colonel .. | } To perform the same duties now done by<br>the District Pay Office.                   |
|    | 1 Major ..          |  |
|    | 1 Captain ..        |  |
| C. | 1 Lieut.-Colonel .. | } To pay all the regiments and depôts in the<br>General's command.                     |
|    | 1 Major ..          |  |
|    | 2 Captains ..       |  |

- |    |                  |   |   |
|----|------------------|---|---|
| D. | 1 Lieut.-Colonel | } | To pay all the men belonging to the Army Reserve—about 12,000.    |
|    | 1 Major ..       |   |   |
|    | 2 Captains ..    |   |   |
| E. | 1 Lieut.-Colonel | } | To pay all the Pensioners belonging to the District—about 12,000. |
|    | 1 Major ..       |   |   |
|    | 1 Captain ..     |   |   |

In the pressure of a great war all the work in the district could, with well-trained clerks, be done by very few officers, especially if officers from the Reserve were utilised, so that the great bulk of the seventeen would be available for the seat of war, as compared with the three, who under the existing system would be sent, and yet the work would go on nearly as well. But this could not be done without a tip-top staff of well-trained clerks, which I have arranged for.

Let us now compare the N.W. District with Aldershot, a district in which the plan I advocate is already in existence. In the N.W. District there are eighteen officers of the A.P.D., but only about 25 per cent., or four in all, could be sent to the seat of war. But at Aldershot there are only ten financial officers, and yet they could send more to a campaign! The difference between the two districts is that at Aldershot all the A.P.D. officers are concentrated under one chief paymaster, whereas in the N.W. District they are all scattered about. Why should not the Aldershot system be applied to the whole Army? It was adopted during the time that one of our most practical generals was in command, and it must therefore be assumed that it has the approval, at all events, of Sir Evelyn Wood, our present Quartermaster-General, and he is not the man to overlook details in his command. It does not meet the case to say that at Aldershot all the troops are concentrated and that in this district they are scattered. Aldershot is a large place, and a great deal of the work is done through the medium of the post, and it is only a question of a few hours' difference from one part of Aldershot to another by post, or from one part of a military district to another. The principle is the same in both cases.

I am not asking for anything new or untried, nor am I advocating a blind imitation of the system in existence in the Continental Armies, as there is nothing for which I plead that has not already been tested in some part of Her Majesty's dominions by British officers. We see in India how admirably the finances of an Army can be conducted by practical, working, military officers, without the assistance of a small body of civilians, who have never had any practical experience of the working details of the machine they are managing. In Aldershot, Woolwich, Gibraltar, Egypt, Hong-Kong, and, indeed, in all foreign stations, we already see the system adopted of concentrating the financial officers at the headquarters of the district, which enables a larger percentage to be at once available for war.

The past history of the way in which our finances were conducted shows the advantages, from the economical standpoint, of reducing financial work to a system. When I first joined the Service, we had more

than double the number of W.O. civilians that we now have. In addition, we spent a large sum of money on civilian army agents, and had an enormous body of regimental paymasters, and a very large body of staff officers of pensioners. These were all engaged in finance, and among them they must have cost the public a goodly sum. None of them had any connection with each other, and there was practically very little system in existence of rewarding the good ones, and eliminating the bad. The Army Pay Department was then formed in 1878, and, slow as the process has been, from that time there has been a gradual working in this direction of system and order. Regimental paymasters were abolished, staff officers of pensioners were absorbed, civilian army agents were dis-established. In the light of subsequent events, it is amusing to think what opposition was raised to each proposed reform; and, no doubt, in years to come, future generations will be amused to think of the opposition raised to my present proposal to reduce existing methods to one definite system. The savings have been enormous, and yet none of the predicted disasters have been fulfilled; and who will dare to say that, in spite of our defects, the work is not better done now than ever it was in the old extravagant days? We are, however, now suffering, to a certain extent, from a transition stage. We have gone too far ever to retrace our steps, even if any advocated such a retrograde movement; but we are in considerable danger because we have not yet gone far enough. There has been no great war since the A.P.D. has been formed, so there has been no great strain upon it; but if we may judge from some of the little campaigns that have taken place, one cannot but hope that more progress will be made before we find ourselves embarked in a serious campaign. The different methods that exist clearly show that our existing system is not the result of any carefully thought-out plan, but rather the relics pieced together of former systems. The old and the new cloth are sewn together, with the inevitable results. At the time of the Russian war, costly and foolish as was the financial system that existed, still there was an apology for some system. New ideas have prevailed since then and new plans have been adopted, with the result that the old obsolete system is broken up, but that none worthy of the name has taken its place. I believe that there is more chance of a breakdown now in finance than there was then. In those days we had a well-paid officer and a clerk for every battalion. It was a costly plan, but still it could not break down. The Army has considerably increased since those days, and paymasters have considerably decreased, and unless the system is re-adapted to the changed circumstances we shall be in great danger of a breakdown; there are only twenty-six W.O. civilians blocking the way, and some of these will soon retire from the age clause. Let the remainder be absorbed by the 208 military officers of the A.P.D. Several W.O. civilians, at the formation of the A.P.D., left that institution and joined that new branch, showing that no real reason exists why a further absorption should not take place. The cost of having 200 officers and 1,000 clerks would be considerably less than what we now pay for 234 officers and W.O. civilians, and 942 clerks. With such an establishment,

in which each man was trained to be interchangeable, and could be set to do any kind of work in peace or war, at home or abroad, there would be no fear of a breakdown anywhere. If all paymasters were concentrated into fifteen large centres at home and twelve smaller ones abroad, and the system in each was assimilated to that of the W.O., there would be absolutely no reason why officers and clerks should not be interchangeable between the W.O. and the districts, only the picked ones of ability going to the former. We should thus have a system better adapted for peace than the existing method, and more capable of expansion in the event of a great war. When a war broke out, each centre could supply 30, 50, or even 75 per cent. of the officers and clerks, and yet the work would go on smoothly. If it appeared that a chance existed of the war lasting for a prolonged period, as in the Russian war, each centre would become a school for training fresh officers and clerks so as to fill vacancies, as they occurred from time to time. In this way we may some day hope to see an economical military financial system, which will be adapted for war on the largest possible scale in which the British Army could be engaged, and yet costing £22,386 less than the defective one which now exists, which could not possibly stand the strain of a prolonged campaign, which is ill-adapted for peace, and which, though costly, does not attract a sufficiently large percentage of men of ability to enter the executive or the administrative branches. I have great faith in the British officer of the present day, and I venture to think that there is nothing a civilian can do that a military man cannot do even better, provided that he is given the opportunity of training himself for the work.

Lieut.-General Lord WILLIAM SEYMOUR :—It is to be wished that a larger number of officers could have been present to-day from whom to choose a spokesman of the combatant branch to speak on this important subject, which has been brought before us so ably by Colonel Churchill. If I may go back to my own experience on this subject, I should say that Colonel Churchill had understated the number of gentlemen who are found necessary to audit the Army accounts. Keeping now to "peace," if it will not bore you, I will narrate a little anecdote of an incident that occurred during the time I was on the staff at Aldershot, which brings into absurdity not only the audit of the War Office, but one much higher. It happened that a signal class officer wished to bring his company sergeant-major to notice, and thought that he ought to have the rank and emoluments of a regimental sergeant-major, the increase of which to the Army Estimates would be sixpence a day. At that time the Army Estimates, perhaps, were not quite what they are now; but they were, I think, sixteen millions. This recommendation went up the ladder. You all know the way—the Colonels on the staff, the Generals, the Quartermaster-General, and the Adjutant-General at the Horse Guards, the Under-Secretary for War, and then the higher authority of the Secretary of State. There it was lost sight of until some three or four months later. I happened to be dining out in London, and an old friend of mine—one of the head clerks of the Treasury—said to me :—"Seymour, you are the very fellow I wanted to see. The question of Sergeant-Major Hitchcock, of the Engineers, came up the other day. Surely it is not necessary that he should have this extra rank and pay, is it?" I replied :—"Is an Empire spending sixteen millions a year to have this item of sixpence a day questioned by a gentleman who is in the Treasury, after being recommended by the Commander-in-

Chief and Secretary of State for War?' He replied:—"You have no idea what those fellows at the War Office are!" That shows that the War Office have not the complete audit, and that it goes higher—to the Treasury. As regards the system in war, I am very glad to see that my friend Sir Walter Olivey is present. I think a man who has held the position that he did in two campaigns, and has come home and survived the chaos that existed at the War Office for two or three years after those campaigns of 1882 and 1885, deserves not only to be given the K.C.B., but to be complimented by everyone in his own Department and in the Army. I agree with the excellent suggestions of Colonel Churchill with regard to the accomplished officers found in the Army Pay Department; but those officers ought, as Colonel Churchill says, to have at their fingers' ends the system of Pall Mall before they go out to a campaign. How this is to be done, how the twenty-six senior clerks, and the 212 other gentlemen are to be united, I leave to those more experienced than myself to say; but, having commanded a district for the last five years, I am perfectly sure that without this reform it will be impossible to get our military finance on the same equality and the same standard of excellence that I understand exists in India. What we want is, not an audit over every sixpence coming back a year or more afterwards to the district to say that Lieutenant So-and-So seems to have taken the wrong journey from Woolwich to Dover, and that he ought to have found out that there was a cheap way of going by excursion; but an audit entirely within the district. My experience of late years has been that the Army Pay Department, together with the District Staff, is perfectly qualified to do this—a great deal more qualified than the gentlemen at Head Quarters can possibly be under the present system.

Colonel Sir WALTER R. OLIVEY, K.C.B., A.P.D.:—Perhaps I may be permitted as an old officer of the Army Pay Department to say a few words, and to recount some of my experience on this great question. I only propose at the present time to touch the merest fringe of the question, as it would take hours to go into all the details that can be urged against the present system of the pay of the British Army. I cannot say that I follow my friend Colonel Churchill to the bitter end, as it were, but I go a long way with him. Whether you make an amalgamation or not, I think there ought to be a large importation of paymasters into the War Office. I shall take one thing the lecturer has said as my text on this occasion, "Those who have not worn the shoe cannot tell where it pinches"; and it is impossible for a civilian War Office clerk, or any War Office official (let him be as talented as he may), to take a correct military view of the pay of the Army, or of any subject connected with the discipline of the Army. They are quite at fault with regard to their ideas of discipline. That has been the weak point with the Department ever since I have known it. I believe most of the generals in the Service agree that the Pay Department should be absolutely under the commanding officer, and that the commanding officers of the districts should be the determining authority as to whether a charge is right or not, and should only have the Auditor-General's Department behind them. I am obliged, in order to illustrate the subject, to give some of my own experiences, and to be to a great extent egotistic. I wish to commence with the station system. Many years ago, before that system was taken into operation, or possibly thought of, I saw that paymasters in regiments were a useless encumbrance and a useless expense, and that a portion of that great cost might be saved by getting the work done by a greater concentration of paymasters. I advised the War Office that they were useless. For years after that the system was not adopted; but at length it was, and when it was it had one great fault—a fault, of course, inherent in the War Office system, as they did not understand the true bearing of military discipline. They actually made the station paymaster not accountable to and not to be interfered with by the chief paymaster of the district, although one wall only might have divided their two



offices. That would never have been done if the War Office had sufficient paymasters within its walls to advise on military matters and, I may say, on military etiquette. With regard to the amalgamation of the War Office with the Army Pay Department, possibly it may come some day, but I do not think it is yet (to adopt a political phrase) within the region of practical politics. I think, however, that the time has come for a great importation of paymasters, or of the Army Pay Department into the War Office, in order that they may keep pace with the improvements taking place in the combatant branch of the Service, which they do not keep pace with at present. There are many things to be gone into to illustrate that; but the time at my command will not allow me to go into many details. The War Office are always too slow in their reforms. I do not know when I told them of the non-necessity of paymasters in regiments, whether they had received similar information from other sources; probably they had, as I have no doubt that others had discovered the waste as well as myself. But this I do know, that it took several years to carry out the reform, and it was eventually carried out in the way that I happened to recommend. I was asked several times in conversation with my friends what I should do, how I should distribute the money, how I would send it to regiments, or account for it. I told them of several plans, but the plan that I approved of most was that it should be distributed by the adjutant, who should get a small allowance for doing it. That, I believe, is now in operation. I am, however, a little out of touch with the Department now, but I believe that it is absolutely the case. I wish it to be thoroughly understood that I do not attack any individual. I simply say the system is wrong. It is impossible for a War Office clerk or a War Office official to determine on military points with any degree of satisfaction, if he has never been in the Service. It is only those who have actually served who can properly adjudicate or legislate for the Service. That is the principle I go upon. I have had many a talk on the subject with an officer now very high in the Service—I do not mention names—who often told me, "The War Office people are your natural superiors." I was always at issue with him there. I said, "It is all very well for them to examine accounts; but the government of the Department should be in the hands of the Department under military authorities." I always stick to that, and that the Pay Department should not be independent of the military authorities, should be under the military authorities in their districts. There is one other improvement that I have been recommending to the War Office for years, but I have not got them to carry it out yet. I have been told by several of my friends there, "We think that your improvement must come to pass eventually." It is that all the troops of the district should be paid from the headquarters pay offices of the district. There should be no scattering of the paymasters in the district. There should be one office, and that the office of the chief paymaster. And I go further than that. When I was at the Horse Guards I recommended to them that system, and I said, "I am willing to carry it out, to be responsible for it, and to stake my reputation on the result. I am ready to pay the whole of the Home District." I selected the Home District for two or three reasons. One was, that I happened to be there myself. Another reason was, that there are not many regiments, exclusive of Guards, quartered in the Home District; therefore, it could possibly have been done with less friction to the whole Service than if it had to be carried out in any other district. Another reason, I think a good one, was that the Guards should not be paid in a different way at home from what they would be when going on service. Now, to transfer the Guards suddenly to the payment of the chief paymaster of an expedition seems to my mind like swapping horses when crossing a stream. At all events, if the whole of the Guards are not paid in the same way as the rest of the Service, I think the least that should be done in that direction is that those battalions of the Guards which are in the 1st Army Corps should be transferred to the payment of the Chief Paymaster before there is any possibility of their going on an expedition,



to save the friction that must occur with a change of system. I do not blame anybody for it. There is bound to be friction in the adoption of a new system. Another reason for my recommending that the whole pay should be issued from the headquarters of the district, was that the Chief Paymaster would then become acquainted with the whole of the officers of the departments in that district. Now it is impossible for him to be acquainted with more than a very few of the officers of the Service. I experienced that difficulty when in Egypt, when the paymasters were sent out in 1882 and 1884. I found that I might possibly have known the qualifications of about one in ten. It was impossible for me to put the best man in the particular position I wanted him to occupy. I had simply to guess at it—to take the list and write off the stations; there was nothing else to be done. I knew the qualifications of a few, but not of the rest. Just a word with regard to audit. I am sorry I do not go with my friend Colonel Churchill in his opinion with regard to auditing every account. I have told the War Office—I do not mean in an offensive way—that audit has been going mad for a long time. We want to get audit into a proper state of health. I do not think it can be in a proper state of health when it has to have such a tremendous lot of money spent on it. To prove my case, I analysed a year's accounts of the Home District. The expenditure was about £200,000 each half-year. I rather astonished the War Office when I told them what the result of the analysis was. In the first six months there was a loss—not a gain—of something under £1. In the next six months, I think they gained about the same amount. That was the result of that expensive audit during a whole year. From that circumstance, and from others, I think the best mode of audit would simply be that the Chief Paymaster's Office should consist of two branches: the one a pay branch, and the other an audit branch. The one branch should not be at all connected with the other, except that it would have the same chief; and the audit should be final, except that the Auditor-General's Department might have for audit any vouchers or any accounts that he wished, at any time. Probably that would result in his auditing one account in three, which, as my friend has said, is about the average now. Well, I think that is quite enough if the chief paymasters of the districts do their duty. There is no doubt that the auditors well know whose accounts they can pass with only a glance, and they equally well know those accounts of which they must go into every item. In the case of the notoriously good accounts, it might be sufficient to audit one account only in the year. Of course, the accountants would never know that; they would be kept up to the mark quite as well as they are at present, and there would be much less expenditure of public money. I am very glad to see that the War Office policy is tending now in that direction. There are many other details that might be gone into, but I do not know that I can introduce those two subjects better than by what I have said. There is one thing I might mention, and that is the system that obtains in our staff. That system on the formation of the Army Pay Department appears to me to have been absolutely ignored. The system of extra allowances for extra work and extra opportunities for distinction brings out the talent of the Service. There is no doubt that it has brought out talent on our staff. Everyone wants to go on the staff because of the extra opportunities and chances of promotion. When the Pay Department was formed we were all reduced to one dead-level; there was no opportunity for anybody. At last some little allowance did creep in. It was a thing that we felt most acutely in Egypt. We had the greatest possible trouble to get allowances for those who did the best work. In fact, at the beginning of the campaign it was really to the interest of a man who did not care about working much to show that he was just equal to his work, and was not so superior as to be placed in the hardest and worst station, where he would have the hardest work with no extra pay and no extra prospects. I say that extra pay and extra prospects are necessary in every department to bring out hidden talent. If a man knows that he is going to get a good allowance for doing laborious work, he will go in for that work—there is no doubt about it.

I am glad to see that this system has now been adopted to a certain extent, but I do not think it has gone far enough yet. In a campaign the War Office is so jealous that it will not even allow the commander-in-chief of the troops to authorise compensation for the loss of a horse. I remember, for example, the case of an officer of our own Department who was obliged by order to send his horse by train from Ismalia up the country. The horse was killed. That, of course, was not within the War Office's ideas of compensation. If it were killed in action it would be all right, but as it was killed by being frightened when leaving the train it was a different matter. The question was fought for a long time, and I am not sure whether the officer ever succeeded in getting compensation. I contend that if the Commander-in-Chief is not authorised to decide such questions, the War Office ought at least to have somebody on the spot who could decide them. I do not know that I need detain the meeting any longer. I am glad to say that I agree to a very great extent with my friend; but with regard to the amalgamation of the Pay Department and the War Office, I doubt whether the time has come for that. That a considerable number of officers should be sent to the War Office, I have not the shadow of a doubt.

Lieut.-Colonel CHURCHILL:—I feel most heartily thankful to you all for the kind way in which you have listened to the lecture, and I think that I ought not to trespass any longer on your kindness. I should, however, like to say, in answer to the remarks that have fallen from so able and experienced a judge as is Sir Walter Olivey, that I do not desire to see the proposed scheme accepted all at once. I have sketched out a plan of campaign, but the objects I hope to see attained step by step. I am glad that he considers that the time is fully ripe for the first step of decentralisation; that is, transferring the audit from the War Office to the general officers in command of districts. Let the chief paymaster of each district be made a financial staff officer, and let him, under the G.O.C., be the responsible official to conduct the entire audit of his district. Then a Chief Paymaster, with the position of Deputy Accountant-General at the War Office, could easily superintend the chief paymasters in the districts, and see that their audit is a good one. This might be the first step, and the others might follow later on. I need hardly say how gratified I feel to think that so distinguished a general officer as Lord William Seymour, and so able a paymaster as Sir Walter Olivey, should both concur with the suggestion that I have ventured to lay before you.

The CHAIRMAN (General Sir W. Gordon Cameron, K.C.B.):—My duties on this occasion seem to be especially easy, because I have not heard one single dissentient voice with regard to that which has been so ably advocated by my friend Colonel Churchill. All I can say is, that in my various commands my experience has been entirely in accordance with what has been set down in the lecture. I have endeavoured to the very best of my ability, when I was in command, to supervise as far as possible the financial system of the district. But I can only say that even with every encouragement given I have never been able hitherto to get much advice from the Army Pay Department. That has been entirely owing, I believe, to the system with regard to the formation and promotion in the Army Pay Department, which has been so well dealt with in the lecture. You require in the Army Pay Department the same *esprit de corps*, and the same enthusiasm in the performance of duty, as you do in any other branch of the Service; and we ought to have a system which will be conducive to get the very best officers in the Service, having a taste for finance, to join the Army Pay Department. But you cannot expect to have that under the present system. Under the present system you merely have officers joining the Pay Department because it is a matter of convenience or a want of means. There are very few officers who join the Pay Department from sheer love of that branch of the profession. I have been delighted to hear the remarks of Sir Walter Olivey. With regard to what he has pointed out for our consideration, I believe

he has put everything to a real, practical proof during both campaigns in Egypt; and, according to the old British saying, "The proof of the pudding is in the eating," there is nothing I listened to with greater pleasure than the experience of a man who has been at the head of affairs. I can assure you that I have been as much interested here as anybody could have been with the remarks that have been made—all of which I can thoroughly endorse from my own experience. The system that we have in the Finance Department in time of peace ought to be the same as in time of war. The two things must go together, otherwise, in a state of war, you would have chaos. As it is at present, nothing can be more costly and expensive than our wars. The country is willing to grant anything when war breaks out. The accounts are hardly questioned, and money can be spent nearly *ad libitum*. Therefore, it is all the more necessary to have a highly-trained Army Pay Department in time of war to safeguard the interests of the public. At present, well, I do not know how they get the number of paymasters on a war breaking out. How was it in Egypt? Did not they supplement the number by means of civilians and others? (No.) At all events we must have in time of peace an Army Pay Department sufficient and competent to undertake all the duties in time of war. Sometimes we are nearly two years before arriving at a settlement after a big campaign—I mean before the accounts are closed. That alone proves a very considerable want of system. I quite agree with what the lecturer has said with regard to having all the paymasters at the headquarters of the district. Having had several commands, I know perfectly well that that could be worked. I feel confident that it could be. I see no difficulty whatever, and I hope that that is one of the reforms that at all events will be introduced without much delay. Then with regard to the whole of the military finances being entirely carried out by the officers of the Army Pay Department, and the general being made strictly responsible for the finance in his own district. When I speak of responsibility, I mean real responsibility. We are always talking about responsibility in our Service, but that responsibility really, as far as my experience goes, is generally a mere form—for there are precious few officers who are made to suffer when anything goes wrong; and, after all, that is what responsibility means—if anything goes wrong somebody ought to suffer for it; and in the same way all those who perform their duties highly to the satisfaction of the chief authorities deserve reward. I do not think there is anything else I can say on the subject. I have read the lecture very carefully. I have compared it with all my own experience, and I am thoroughly in accord with nearly everything that I have read. I think we all owe a debt of gratitude to Lieut.-Colonel Churchill for having brought this matter so ably before the meeting. I do not know exactly whether it is my duty as Chairman, or someone else's, but it will save time, perhaps, if I now call upon you for an expression of your hearty thanks to him on this occasion. I beg to propose a vote of thanks to the lecturer.

## FIRE DISCIPLINE.

*By Captain S. L. MURRAY, 2nd Battalion Gordon Highlanders.*

THE greatest importance is now attributed to fire discipline in the Infantry Drill and in the Musketry Regulations, a series of three exercises being laid down for its practice in the last named. This is undoubtedly a great advance on the not far-distant past, when little or no attention was paid to the subject. As, however, progress is now the order of the day all through the Army, it may, perhaps, be permissible to inquire whether a still further improvement is not possible ; and if so, of what such an improvement should consist.

To begin with, it is necessary to consider what our present fire discipline teaches us, and what it does not teach us, and after that to consider in what direction further progress is desirable.

If we consider, in the first place, the essential points of our present system, we find that it has hitherto devoted itself solely to enforcing the need for correct direction, control, and execution of the fire under what may be called normal circumstances, under circumstances approaching those of the parade-ground. So much is this the case, that it seems a fair definition to call it merely a series of exercises in the control of sectional fire. In support of this definition, the following considerations are submitted. In our Musketry Regulations and at Hythe, the drills in sectional fire and in fire discipline are merely duplicates of each other. In the sectional fire drills we are taught to direct, concentrate, and control the fire, to change the objects and distances, and to employ the various kinds of fire ; while in the fire discipline drills we are taught exactly the same things, with the exception that instead of remaining stationary, the men are now moved about.

The question which arises from the foregoing is, Why cannot we rest satisfied with our present fire discipline as it is, and why is it required to progress further ? To answer this question it is necessary to consider its origin and its object ; and then whether, in order to attain that object, the suggested progress is requisite.

Fire discipline was evolved from the experiences of 1870 as a means of maintaining discipline amongst the mixed swarms then found to be characteristic of breech-loader battles. In other words, it is the means whereby it is hoped to overcome the dissolving effects of the breech-loader. Its object is to prevent our high musketry training being rendered

of no avail by the confusion and disorder of modern battle, and it should endeavour to accomplish that object by providing remedies. Such, in a few words, is the origin and object of fire discipline. But before proceeding with this task, it was, of course, first necessary to make sure that the troops were thoroughly trained in the proper direction, control, and execution of collective fire, that is, in the elementary part of fire tactics. As the general subject of fire tactics was a product of 1870, this elementary part took a good many years to introduce uniformly throughout the infantry; so much so, in fact, that the real task of fire discipline was postponed and almost lost sight of. Some indeed, forgetting its origin on the blood-stained fields of 1870, began to consider it as merely the delivery of regulation fire commands correctly and in proper sequence, adjusting sights, changing objectives, etc., etc.: that is, it was held to be nothing more than the orderly management of collective fire. This, however, is merely a necessary preliminary; and the real object of fire discipline remains as before, namely, to remedy the dissolving effect of the breech-loader—*i.e.*, to prevent our musketry training being rendered of no avail by the confusion which is inevitable in battle. This object we have not yet attained; and, therefore, further progress is required.

After having learned to deliver our fire under *normal* circumstances (by musketry drills in sectional fire, including the present three drills in fire discipline), it seems that what we require further is some system of drills in overcoming the difficulties that will confront us in endeavouring to apply our musketry under circumstances that may be described as *abnormal*—*i.e.*, when normal formations are broken up and mixed, when normal leaders are shot, and when the din of the breech-loader, resounding incessantly from both sides, renders it difficult to hear even words of command. This, however, is just what our present fire discipline does not teach us. It is therefore in this direction—in the direction of preparing us to deliver our fire under *abnormal* conditions—that progress is essential. We first require musketry drills to teach us how to deliver our fire under *normal conditions*, and then a system of fire discipline starting where the musketry drills leave off, and teaching us what to expect and do under circumstances where these normal conditions are upset, *i.e.*, under *abnormal circumstances*.

The obstacle which has hitherto held back the progress of fire discipline (namely, the want of a proper preliminary training in collective fire) has now disappeared, and our collective or sectional fire drills are quite sufficient to teach all that is necessary under normal circumstances. Of course it is not asserted that perfection in collective fire has been attained, any more than it has been attained in any other branch of military training, but that an almost sufficient level of efficiency has been reached (superior to that of foreign nations), which the sectional fire drills—stationary and on the move—will every year improve. Fire discipline can therefore afford, for the future, to leave collective fire, under normal circumstances, to the sectional fire drills, and concentrate



its attention on its own particular object, namely, how to remedy the dissolving effect of the breech-loader.

Before attempting to proceed further, it is perhaps advisable to define a little more clearly what is meant by normal and abnormal circumstances. By normal circumstances are meant those which approximate to the conditions of peace exercises, such as an attack carried forward successfully without checks or long halts. By abnormal circumstances are meant those which are completely different from what occurs at peace manœuvres, as a type of which we may take a long fire-fight of some hours' duration carried on at "the first parallel," which we may assume to be 600 or 500 yards from the enemy. It may, however, be objected that to talk of the fire-fight at "the first parallel" as being measured by hours, is to assume an extreme case, for which it is not necessary for our fire discipline to prepare us. To answer the possible objection, the following considerations are put forward.

In considering the subject of the infantry fight there is one fact which is sometimes overlooked, namely, that as all nations are now much on an equality as regards artillery material and tactics, we cannot hope to attain such artillery superiority as the Germans obtained in 1870. Superiority of artillery fire at the decisive point our generals may indeed obtain by superior manœuvring, but this is by no means certain. It appears, therefore, that we cannot count upon attaining our object by a rapid infantry attack delivered against an enemy shaken and demoralised by an overwhelming artillery fire. This point is important, as it follows that our infantry will have to do more of the work, to be longer under fire, and to gain our object by more protracted efforts than is often assumed to be the case. We hereby arrive at the question of time in its relation to our system of fire discipline.

On the parade ground the attack consists of a more or less rapid advance against, and assumed capture of the position. At manœuvres the same thing happens, or the defenders retire, or the "Cease fire" sounds. But in European battle, between the first advance and the decisive assault, there intervenes a long fire-fight of hours' duration. As an estimate of time, we may take the rough rule given by Clausewitz:—"The resistance of an ordinary division of 8,000 or 10,000 men, even if opposed to an enemy considerably superior in numbers, will last several hours—and if the enemy is only a little, or not at all, superior in numbers, will last half a day. A corps of three or four divisions will prolong it to double that time, etc.—these calculations are the result of experience."

It is therefore clear that the chief consideration in fire discipline is not concerned with the details of the first advance, which (though important in drill for the attack) are only parts of a *preliminary* operation. What it has chiefly to concern itself with is the management and control of the troops during the long fire-fight which follows the first advance—an advance which will bring us well within the medium ranges, and possibly up to about "the first parallel."

As an illustration of such a long fire-fight preceding the assault, let us take the mixture of Saxon and Bavarian regiments at Monvillier Park

and La Moncelle at Sedan, which began to accumulate at 6 a.m.; and as further progress could not be made, increased till 9 a.m. Then came the French counter-attack, to repulse which still further reinforcements had to be pushed into the pell-mell, and "the different units were almost entirely dissolved into lines of skirmishers." At 11 a.m.—that is, *five hours* after the mixture first began to accumulate—came the general advance which captured the first ridge in front; after which the units were as far as possible under cover of the ridge. Of course, similar instances could be taken from every battle; but it is unnecessary to give more than one, in order to draw attention to a fact which is frequently overlooked, because it does not come into parade-ground attacks. It is, however, important to remember, because so many seem to confuse the introductory process of wearing out the enemy's strength and the final advance to the assault. One hears it said that there will be no time for schemes of fire discipline being applied; they are, therefore, unnecessary, and not worth bothering about. This is doubtless true of the actual advance, when the only cry will be "Forward"; but in the hours-long fire-fight which precedes and renders possible the decision, there will be plenty of time; and it is then that a correct and universal system of fire discipline previously taught in peace may make a vast difference.

If we consider either the theory of battle or its practice, we see the great importance of these stationary fire-fights, of which the greater part of a battle consists, and upon the proper control of which a favourable decision chiefly depends. A battle consists of a destructive and of a decisive act; or, more particularly, of a series of independent combats, each consisting of a long destructive and a partially decisive act, the sum of which goes to prepare for and render possible the final decision. In the destructive act, both sides gradually, in the course of hours, wear out their strength and the majority of their troops by the successive use of their forces, and thus it is rendered possible for that side which has used up fewest troops in this destructive period, and therefore has the largest reserves, to employ them in a rapid decisive act against the used-up troops of the enemy. Clausewitz gives the proportion of troops who are thus "used up" in the destructive act before a battle is ripe for decision, as about four-sixths of the whole, of whom only about one-sixth are killed or wounded. These troops are thus "used up," because they are physically exhausted; they have to a great extent expended their ammunition; they have lost their formations; they have often lost their leaders; their courage has had the edge worn off; they have had enough of fighting; and they will not go into further danger if they can help it. For all these reasons, their value as a fighting force becomes less and less, and their influence on the decision practically *nil*. The decision, therefore, rests with that side which has used up the fewest troops during the destructive period, and which, consequently, has the greater number of fresh troops in rear in reserve.

It is, therefore, manifest that this hours-long stationary or fluctuating fire-fight, during which the two armies mutually wear out each other's strength, is of the greatest importance in battle, and is worthy of most

careful study in peace; also, that it is not practical to neglect it for the sake of practising merely the advance. It is manifest that a chief means of victory is to carefully study and prepare for this period in battle, to study and *practise* how we can prevent our troops in front being "used up" too quickly and requiring too many reinforcements, how we can best economise our forces and enable a smaller number of our own troops to get to the bottom of a larger number of the enemy. In other words, to see if we cannot reduce the theoretical proportion of four-sixths of the whole force who are thus "used up" in the destructive act to a much smaller proportion. To achieve this is the task of fire discipline.

If we consider the practical side of the question, the actual fighting in battle, we find the same thing. In nearly every attack of 1870 the first advance usually failed to get within assaulting distance of the main position, but was brought to a standstill at a distance of several hundred yards. When reinforcements of another battalion or regiment arrived, the advance would be resumed. After advancing some distance it would again be brought to a standstill by the arrival of strong reinforcements for the enemy, and the consequent greatly increased strength of his fire. A long, almost stationary, fire-fight would now follow, fluctuating backwards and forwards as reinforcements came up on either side. Eventually the arrival of strong reinforcements would enable the advance to be carried nearer to the enemy; and finally, after a hot struggle, the whole mass of skirmishers (who had, however, during the fight melted away as regards numbers—"used up" in the most astonishing manner), consisting often of companies of various regiments and brigades mingled together, would be picked up and led forward to the assault by such of the senior officers as remained.

We here see that in practice the first advance is a short and comparatively easy operation, which takes perhaps half an hour, while the consequent fluctuating fire-fight lasts for hours. It is accordingly the duty of fire discipline to concentrate its attention on the greater difficulty.

As regards the physical exhaustion which follows a long march to the battle-field and a long fight afterwards, the only remedy lies in a strict system of discipline in peace; so that the word of command may act as a kind of electric shock, and be obeyed instinctively, despite exhaustion. This strict discipline is, therefore, a necessary foundation for fire discipline.

The three chief causes of troops becoming "used up" and ineffective appear to be:—

- A. The loss of formations and mixture of units.
- B. The noise and confusion and want of ammunition.
- C. The loss of leaders.

It fire discipline is to carry out its duty of remedying the dissolving effect of the breech-loader, what it has to do is to remedy these three main causes of inefficiency. Even before the introduction of the breech-loader these were among the chief causes which led to troops becoming "used up," and since its introduction, owing to the long fire-swept zones and the rapidity of fire, they have become so accentuated as to require a special series of remedial drills. The habituation of the soldier to these

remedial drills is fire discipline. It is submitted that this is the only view of fire discipline which will hold water, if considered from the point of a close fire-fight between breech-loader and breech-loader. As regards the soldier's training for battle, we therefore get :—

*Drill*, to teach him discipline and the power of united action.

*Musketry*, to train him in collective fire whilst in his normal formations and under his normal leaders.

*Fire discipline*, to train him how to act in the stress of modern battle when those normal formations are broken up, and those normal leaders are shot, so as to prevent him becoming "used up."

A. As regards the first cause of troops becoming "used up," the pell-mell mixture of units and the consequent difficulty of command ; if we consider it from the point of view of a frontal attack, it is plain that, owing to the principle of the successive use of forces in a limited space, as line comes up behind line, it is inevitable ; if we consider it from the point of view of a flank attack, we find the same, for, "The form of the outflanking attack, moreover, in case it succeeds, brings it about that the troops converging upon one point become more and more mixed together. *The most various regiments become mixed up like the coloured glass in a kaleidoscope.* And this is all the more so in proportion as the troops show themselves braver and more successful in their onslaught, and advance further." (Von der Goltz, "The Nation in Arms.") According to parade-ground theories held by some, this mixture can be avoided by ordering units to close as casualties occur ; but such arrangements are not even theoretically sound, and much less so practically. Theory based on battle experiences tells us that the number of casualties bears a very small proportion (one-sixth as against four-sixths) to the number of men who become "used up," and to the consequent number of reinforcements required, for which, therefore, the requisite gaps could not be left. Practical experience says that troops under the effective fire of the breech-loader *will not* thus close. "If fresh troops came up from the rear during a stationary musket fight—it was necessary to double them up with the old skirmishers, because *closing to a flank was usually not to be thought of.*" (Von Boguslawski.) "*It is no longer possible for skirmishers within effective range of the enemy, and in face of the breech-loader, to take ground to a flank or to diminish their intervals, without suffering fearful loss.* Hence nothing is left for a reinforcement coming up from the rear but to double itself up with the skirmishers." (Von Scherff.) Our "Infantry Drill" also draws attention to this fact on page 114 :—"It may be expected that the stress of battle will have brought about in certain portions of the field a mixture of companies, battalions, and even brigades, rendering the work of commanding more and more difficult."

The practice of the pell-mell formation is, therefore, consonant with the theory of battle, with practical experience of breech-loader battle, and with the infantry drill.

It is hardly necessary to observe that those who advocate the practice of the pell-mell formation do not wish in any way to neglect

the practice of keeping units intact, as enjoined by the "Infantry Drill," *as long as possible*. The contention only is that in action under effective infantry fire a point will be reached where *it is no longer possible*, and that the pell-mell should be practised, as a fire-discipline exercise, so that we may then have a means, to which we shall all be accustomed, of avoiding the otherwise unavoidable confusion.

The best way out of the difficulty is to practise both methods of reinforcing, so that we can use whichever is possible and best at the moment. Both systems can be practised if some distance be fixed upon, say 600 or 500 yards, within close effective range, beyond which units can close and leave gaps for reinforcements, and within which this is assumed to be no longer possible, so that all reinforcements must mix up with the firing line, the mixture thus formed being at once told off into new units of command.

As regards the method of practising the restoration of order in a mixture of units, various ways can of course be thought of. But what we want is, that one way shall be selected and taught, so that all ranks and all regiments shall know it, and when a mixture occurs there may be uniformity in the method adopted to restore order. On the whole, the simplest and easiest method appears to be the method of "uplifted rifles," and therefore it is here advocated for uniform adoption. It is as simple a plan as one can think of, and in its simplicity lies its chance of being successfully applied in "the stress of battle."

The method of "uplifted rifles" is as follows:—A mixture of two or more units takes place; thereupon the officers meet and rapidly agree upon the distribution of the line into new units. A captain then orders the man on one flank of his proposed new company to hold his rifle up vertically in the air above his head, then runs to the other flank of his proposed new company and orders a man there to do the same; he then blows his whistle and shouts out "My company extends between these two uplifted rifles." The other officers meanwhile do the same, and almost at once the mixed line is retold off into new company commands. Then the sergeants sub-divide these new companies into new sections by the same method. This simple method has been applied with complete success in Germany, and appears to meet the difficulty better than any other.

*B.* We now come to the second great difficulty to be met, namely, the deafening noise and consequent difficulty of command, and the rapid expenditure of ammunition. In our collective fire we have two descriptions of fire, volley and independent firing, the former of which will merge into the latter as the troops advance into the closer and more effective fire of the enemy, as the units get mixed, and as the incessant din of the rapid-firing breech-loader on both sides renders it more and more difficult for words of command to be heard. With the present flat-trajectory rifles we may consider 600 or 500 yards to be within the close effective fire of the enemy, and may therefore assume the fixed sight range as the place where volleys will begin by stress of circumstances to merge into independent fire. That is to say, that at the decisive



ranges the battle-fire will be independent firing, and further, that, as the fire at decisive ranges is more important than the fire at medium ranges, therefore independent is more important than volley firing.

If, however, we turn to regimental practice, we find that independent fire is very little used or practised, the almost universal custom being to use volleys up to just before the assault or "Cease fire," when about half a minute or a minute is devoted to independent firing. This is apparently due to two causes:—Firstly, a belief that volley firing gets better results than independent; secondly, a certain objection to independent fire, owing to the difficulty of controlling the expenditure of ammunition. But it is surely bad fire tactics to practise our method of medium-range fire so assiduously, and to neglect so much our all-important decisive-range fire. We require a system of controlled independent fire, for use at decisive ranges, 500 yards and under, which shall be studied and practised as much as volley firing is at present.

In support of the above plea for a greatly increased use and practice of independent firing, the following considerations are put forward:—First, as regards results on the ranges: it appears from the exhaustive experiments carried out in the Poona District, 1894 (Report on Indian Field Firing, 1894), that independent gets really better results than volley firing. In these experiments 40,000 rounds were fired up and down the range; the result being that the hits obtained by independent firing were to the hits obtained by volleys, for the same amount of ammunition, as 100 to 88.

Secondly, it is well known that the experiences of 1870 have led the German officers to the opinion that volleys are impossible in a close conflict between breech-loader and breech-loader, owing to the noise and confusion; that in consequence they only now use volleys at long distance, and that their battle-fire is a controlled independent fire. "For the noise of close conflict between breech-loader and breech-loader so drowns the sound of the human voice, that a great part of the men cannot hear the word of command." (Von Boguslawski.) Their idea now is to sweep the ground with independent fire, varying in intensity according as the enemy offers a good or a bad target. We should give due weight to this opinion derived from experience of 1870, and not neglect independent too much in favour of volley firing, but practise both equally. The best way to practise both would be if it were assumed that at the fixed right range the noise begins to be too great for volley commands to be heard, and that, therefore, independent fire should be resorted to at the decisive ranges.

This brings us to the question as to whether our independent fire is sufficiently controlled to act as an efficient alternative to volleys in action. As regards the direction and concentration of the fire, the objective and the range are given as in volleys; so that in this respect there is little to choose between them. As regards change of objectives, there is again no difference; for independent fire can be stopped by the whistle and turned into a new target as well as volleys. But as regards the important point of controlling the expenditure of ammunition—that is where our present independent fire appears defective. True, if too much ammuni-

tion is being expended, the fire can be stopped by the whistle; but then the fire would cease, which is not desirable for any length of time in action. But if the fire is not stopped, independent firing is at present so rapid that it would empty the men's pouches before long. And, as before observed, we have to consider a fire-fight at "the first parallel" that may possibly last for hours. If our independent fire is to be suitable for a long stationary or fluctuating fire-fight, we urgently require, therefore, a system of *slow* independent firing. We require a *slow* independent for use against bad targets, and when it is desired to husband our ammunition; a *rapid* independent against good targets; and *magazine* independent against very good targets. But this *slow* independent is just what we have not got at present; and it is, therefore, in this direction that our independent fire requires improvement. If we require this slow independent fire we have not got far to look for it. It is merely necessary to re-introduce the old-fashioned file firing, and apply it to extended order. We can thus obtain the three desired rates of fire—slow, rapid, and magazine; for we already possess the last two rates in our present independent and magazine independent, and the re-introduction of file firing will give us the first.

Now, as regards the words of command for these three rates of fire. When, owing to the deafening din caused by thousands of rapid-firing rifles on both sides, plus the thunder of the hostile artilleries, words of command can scarce be heard, it is obvious that the shorter an order is the less demand it makes on the reasoning powers of the soldier (which are too dulled by excitement and danger to be able to grasp a long sequence of words), the more chance it has of being audible (before it is drowned by fresh outbursts of fire), and the more chance it has of being correctly passed down the line of excited firers. The absolute minimum is one short word. The following is, therefore, proposed. The men to be trained, after independent fire has been ordered, to regulate the rapidity of fire as below, the order for each rate to consist of one word only. A pause can be produced by the whistle, and the order shouted out or passed down the line if necessary.

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|--------------|---|--|
| Independent. | { | 1. " <i>Slow</i> " (file-firing), no two men of a file must have their rifles at the present together. For purposes of drill the two men of a file work together; in action any two men side by side must work together. |
|              |   | 2. " <i>Rapid</i> " (present independent), each man fires directly he gets his aim; the rate of fire is hereby doubled.  |
|              |   | 3. " <i>Magazine</i> " (present independent firing with magazines).  |

These three rates of fire to be strictly enforced. The control of independent fire will now be easier owing to absence of smoke, as the leaders will have every man under their eyes. It will also be more effective than formerly, as the men can see better now to aim. The men should be constantly practised in these three rates of fire, and in passing these single words of command down the line, till it has become a matter of instinctive custom. As independent fire will usually take place at fixed-sight range, it will not be necessary to alter the range. Also it will

not often be necessary to alter the objective. No further words of command will, therefore, usually be necessary except a change of rate according as the target offered by the enemy is bad or good, accomplished by a shrill whistle and the single word "Slow" or "Rapid," or "Magazine" or "Slow" again, etc., passed down the line. Occasionally it may be necessary to change the objective; thus a whistle followed by "At (new object)," "Slow" or "Rapid," as the case may be.

By thus introducing these three rates of independent fire we should remedy the present too rapid expenditure of ammunition, and get a fire more suited for a long fire-fight at "the first parallel." By thus reducing the words of command to an absolute minimum and training the men to pass them down the line, we obviate as far as possible the deafening noise of a close breech-loader conflict.

C. We must now consider the third great difficulty to be met by fire discipline, namely, the great loss of leaders. This is laid down in the "Infantry Drill" as one of the duties of fire discipline (page 137, para. 3). Yet our fire discipline has at present no exercise which specially teaches the soldier what to do when left leaderless. Yet the extreme importance of thus training the soldier is apparent from the following considerations. In 1870 the loss in officers was about three times as great as one would have expected from the proportion between officers and men. A German regiment has, roughly, 68 officers. If we look at the appendix to the official account of the war we see how severe the losses amongst the officers were. To take, for instance, Vionville—Mars-la-Tour, it appears that the 24th Regiment lost 52 officers, all the officers of the Fusilier Battalion being *hors de combat*; the 52nd lost 50; the 20th lost 42; the 64th lost 41; the 16th lost 49; and so on. The other battles tell the same tale. Boguslawski explains it as follows:—"The noise of the breech-loader—a great part of the men cannot hear the word of command, and the officer can only influence by his conduct and example; hence arose, without doubt, the great loss in officers."

And the same conditions will prevail in the next war, and must lead to the same great loss of officers, and thus produce the same leaderless detachments of whom we hear so much in 1870. There must, therefore, in a battle of the future be many parts of the line where the leaders are down, killed or wounded. And as the experience of 1870 says that, in a close conflict between breech-loaders, an officer's voice can only be heard by a few men near him, it follows that those officers who are unwounded will not be able to command those men who are at some distance from them, and whose leaders are shot. Therefore, in a long-extended firing-line there must be many leaderless portions. This point is in Germany regarded as of the first importance, the central idea of their system of fire discipline being so to train the soldier that even if his leaders are shot he may still fight on correctly. It is thus hoped to get rid of, or at least to minimise, the leaderless detachments who covered the fields of 1870, and whose places had to be taken by fresh troops. If we can thus train our men we shall overcome one of the chief causes of troops becoming "used up," and requiring reinforcements out of all proportion to

the losses, and shall go a long way towards attaining that economy of forces in the destructive period which is the eventual aim of fire discipline.

It may be objected that, however desirable it may theoretically be to train the soldier to fight without leaders, the endeavour to do so in reality can never be otherwise than vain. The reply is, that such would doubtless be the case if an endeavour were made to train him thus for all the circumstances of battle, but not if we select a single simple leading circumstance, and thoroughly train him to fight leaderless under that circumstance till habit becomes second nature. The soldier can be trained to independent action to a limited extent, as in the old days of independent skirmishers. Only it is necessary to select such a simple leading circumstance, and introduce a fire-discipline exercise teaching him then what to do.

If with this view of reducing the demand made on the soldier's intelligence to a minimum, and therefore seeking for a single case in which we can thoroughly train him, we enquire what is the most important battle-case in which he may find himself practically leaderless, we find that it is in resisting a counter-attack. So long as the attack is progressing, the natural impulse of the men will be to press on with the advancing line. But when the advance is brought to a standstill, when the men are exhausted and dispirited by apparent failure, when the enemy threatens a counter-attack, and looking backward no supporting line is seen within reach (as has often happened, and must often happen, as for instance in the case of the Light Division after storming the Great Redoubt at the Alma), then if a resolute counter-attack is made, is the time that leaderless portions of the line may give way, and that the rearward impulse thus started may spread along the line.

The subject of counter-attacks is sometimes overlooked (though insisted on in the "Infantry Drill," pages 119, 147, etc.), because in peace there are no bullets to stop our advance, which, therefore, becomes an uninterrupted one. But in battle the offensive, of course, consists of an alternation of attack and defence, of a gaining of ground and a repulsing of the enemy's attempts to drive us from that ground. As the attack lasts for hours, it stands to reason that the advance cannot be uninterrupted, but that long periods must elapse when it is stationary or fluctuating. And it is just in these defensive periods, when its offensive force is for the time being exhausted, that the great danger to the attack lies. Therefore we must certainly expect and prepare for heavy counter-attacks. Theoretically "it is a first maxim never to remain perfectly passive, but to fall upon the enemy in front and flank even when he is in the act of making an attack upon us." (Clausewitz.) Practically, every battle of 1870 bristled with such counter-attacks. Since 1870 the offensive spirit has become more developed in every Army. The idea of a passive defence is a thing of the past, and there can be no doubt that our attack will be met by frequent and vigorous counter-strokes, to repulse which all our strength and fire discipline will be needed.

Enough, therefore, has been said to justify the selection of resisting

a counter-attack as the special circumstance in which to train our soldiers to act without leaders; so that in stress of battle leaderless portions may not give way, and set an example of retirement which might spread along the line. Out of numerous instances of the danger to be guarded against, take the frontal attacks of the 5th Corps at Wörth and the counter-attacks of the French (official account); or the retirement of the Prussians from Stiring-Wendel at Spicheren, "From the coal-pit ridge, through the white clouds of smoke that rolled between the tall, black chimneys of the foundry, a strong column of French infantry was seen approaching along the slopes of Spicheren Wood to the south of Stiring-Wendel; and the mere sight of its serried ranks and gleaming bayonets brought about the retreat of the exhausted Prussians." (Battle of Spicheren, 5 p.m.; Major Henderson.) It is unnecessary to accumulate further instances: the danger is well known. It is for fire discipline to devise and practise a remedy.

As regards the fire-discipline exercises, or remedial drills, for these three chief causes of troops becoming "used up," it is manifest that they must be above all as simple as possible: first, from the nature of fire discipline, which is meant to be applied in the stress of battle, where only simplicity has a chance of success, for "in war all things are simple, but the simple are difficult"; secondly, because they would have to be rapidly taught to the young soldiers and reservists who would form a large proportion of our troops. It is submitted that the following exercises are as simple as can be devised, and that they would sufficiently meet the necessities of the case.

A. Drill to remedy the confusion caused by a mixture of units—by the method of uplifted rifles.

In company exercises one half of the company to be extended, and the other half to reinforce and mingle with it. The section leaders to at once form new sections out of the mixture by the method of uplifted rifles, making a man at each end of their proposed new section to hold his rifle up perpendicularly in the air, and shouting out, "My section is between these two uplifted rifles." The re-organisation could then, if necessary, be proved by the "Cease fire" being sounded, and the company ordered to form column of sections; after which the company would be reformed on a marker in its original sections, and the exercise be repeated. The N.C. officers and men would thus learn exactly what to expect and do when units are mixed up, and in a short time there would be no confusion on such occasions.

In cases where two companies are working together, one company could be extended and the other reinforce and mingle with it. The two captains would meet and agree how much of the mixed line each would take for his new company, which they would at once form by the method of uplifted rifles, after which the N.C.O.'s would form their new sections in the same manner. The re-organisation could then be tested by a short advance in alternate companies, after which the original companies could be reformed on markers.

In the same manner in a battalion drill the right-half battalion could



be extended, the left-half reinforce and mingle with it: new companies to be at once formed in the mixed line by the method of uplifted rifles and new sections within the new companies. The re-organisation could then be tested, after which the original companies could be reformed on markers.

*B.* Drill for control of fire at "the first parallel" in an hours-long fire-fight, and amidst a deafening noise which renders words of command almost inaudible. Requisites: reduction of words of command to an absolute minimum and economy of ammunition.

Rates of fire as explained before: independent "Slow," "Rapid," or "Magazine."

*Drills.—*

1. To teach the men the rates of fire.

A company or section to be extended in defence, and three or four men sent out with orders to advance as a marked enemy slowly against the company from about 600 yards, as if attacking it, from cover to cover, or lying down and firing when there is no cover, thus offering a succession of good and bad targets. While the enemy is advancing from 600 to 500 yards, volleys to be fired as usual. At 500 yards a whistle to be blown and "independent at (object) slow" ordered. When the enemy advances and exposes himself, a whistle and the order "Rapid." As the enemy gets under cover again or lies down, a whistle and the order "Slow," and so on; "Rapid" as the enemy rises and exposes himself, sinking once more to "Slow" as he gets under cover and offers a bad target. "Magazine" ordered when considered necessary.

2. To teach the men to pass words of command down the line.

The above to be repeated with this difference: in order to simulate the noise of a close fire-fight (which should be explained to the men as the reason) where only a few in the immediate vicinity can hear any order, the officer to modulate his voice so that it can be heard only by a few near him. For this purpose the ordinary tone of speaking is sufficient, orders being spoken, not shouted. The men near the officer who can hear must pass the words "Slow" or "Rapid," etc., down the line to those who cannot hear.

After this exercise has been repeated once or twice it will be found that the men understand and do it.

The advantages of this method of controlling independent fire are economy of ammunition, intensity of fire regulated by goodness or badness of target, and reduction of orders to an absolute minimum of one short word; while its simplicity gives every hope that it could be applied in the stress of battle.

- C.* To teach the men to resist a counter-attack without leaders.

*Drills.—*

1. The same exercise as in (1) of independent fire, finishing with a charge for a few paces, in order to familiarise the soldier with the idea of relying on his bayonet to finally repulse a counter-attack if necessary.

2. Whilst the marked enemy is proceeding out again to begin his advance once more, a short five minutes' lecture to the men on their duties if left leaderless.

The company to be then extended again, all officers and N.C.O.'s fallen out well away in rear, and the men left to resist the counter-attack completely by themselves; the captain looking on from close by to see that all is correctly done, but giving no word of command.

It will be found that after two or three lessons the men readily grasp the situation, the older soldiers take command of sections, and the words "Slow" or "Rapid," etc., are passed down the line as the enemy gets under cover or advances; also "Fix bayonets" at about 350 yards, etc.

In another drill the older soldiers can also be fallen out as casualties, so as to still further train the men in acting by themselves.

It may appear at first as if these suggested exercises are absurdly simple to have been heralded by so long a preface. But it was first necessary to make clear the point of view from which fire discipline is regarded, and to prove the necessity and importance of such exercises being introduced. As for the drills themselves, simplicity is the chief desideratum, for the reasons given before. Similar exercises form the system of fire discipline in Germany, evolved from the experiences of 1870; and the writer has tried the ones suggested here with our own soldiers, and has found that they readily understood them. It is contended that if the troops were trained in these few simple exercises, they would be taught a real fire discipline—*i.e.*, a series of drills for the close fire-fight to remedy the dissolving effect of the breech-loader on all formations, the deafening noise of rapid fire on both sides, and the great loss of leaders. The object aimed at is to obtain for the long fire-fight at "the first parallel" a firing line which would not be thrown into confusion by the inevitable mixture of units, in which the fire would still be controlled and the expenditure of ammunition regulated even though words of command may be almost inaudible, and where, when the enemy counter-attacks, leaderless portions may not retire, and thus communicate a rearward impulse to the whole.

If we can attain this object, we shall have gone a long way towards remedying the dissolving effect of the breech-loader, and towards overcoming the chief causes of troops becoming "used up" and requiring too many reinforcements; and shall thus attain that economy of forces which is the eventual aim of fire discipline.

## NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Vice-Admiral Sir J. A. Fisher, K.C.B., to command of the North American and West Indian Station. Captains—H. T. Grenfell to "Royal Sovereign"; C. J. Briggs to "Vernon."

The coast-defence ship "Hotspur" has been commissioned for service as guard-ship at Bermuda, and with the "Medina" and "Medway," two of the shallow-draught gun-boats constructed some twenty years ago, will be convoyed across the Atlantic by the "Blenheim"; while the "Quail" and "Rocket" torpedo-boat destroyers are being convoyed to the same destination by the "Hermione." The "Leander" and "Phaeton" are convoying the "Virago" and "Sparrowhawk" to the Pacific, the last-named destroyer having been substituted for the "Thrasher," which was first commissioned for service on that station; unfortunately, on the night of the 19th ult., a few hours after leaving Plymouth, the "Thrasher" came into collision with the "Phaeton," and was so much damaged that both vessels had to return to Plymouth, the "Sparrowhawk" being then commissioned to take her place. The "Fame" has also had to be substituted for the "Shark," one of whose cylinders cracked during her commissioning steam trial. There have been a good many accidents among the destroyers lately, but both the "Whiting" and "Fame" are now safely on their way to China. The first-class battle-ship "Rodney," which has arrived from the Mediterranean, has proceeded to Chatham, where she will pay off, and the officers and crew of the "Edinburgh," the first reserve-ship at Queensferry, are to be turned over to her, the "Edinburgh" being paid off into the Fleet Reserve. A serious accident occurred on board the third-class cruiser "Champion," one of the Training Squadron, on the 16th ult., when at target practice off the coast of Iceland, through the premature explosion of the charge of a 5-inch gun while loading, by which the gunner and four men were seriously injured, three others being slightly hurt.

The revised regulations for the Royal Naval Reserve, which were foreshadowed by Mr. Goschen in the House of Commons some time since, have now been issued. The present First and Second Class Royal Naval Reserve will be called in future First Class Royal Naval Reserve (old system), and Second Class ditto. All first enrolments in, or promotion to, the classes under the old system are to cease, but men already in these classes may be re-enrolled in them as at present, and retain all the vested interests in the class in which they are at present enrolled, except that promotion from the second class (old system) to the first class (old system) will not be allowed. There will be constituted two new classes of the Reserve:—1. Qualified seaman class. 2. Seaman class. All entrants in the Reserve will in future join the seaman class, with the exception of boys, firemen, and men who have been discharged from the Royal Navy as able seamen with good characters. The age, qualification, pay, allowances, etc., for the seaman class will be the same as for the present second-class (old system). A Reserve man in the seaman class must, within his first term of enrolment, complete or enter upon a period of six months' training in the Royal Navy, and a man who fails to comply with this condition will not be re-enrolled. No seaman class Reserve man will be accepted for the six months' training who is over thirty-two years of age, who has not been two years in the seaman class, and has not passed for trained man except under

special circumstances. A seaman who does not commence his six months' training during his first enrolment in the seaman class, or who is adversely reported on by his commanding officer during or at the expiration of his training afloat, will be at once discharged from the Reserve. Upon the completion of six months' naval training, a man will be advanced to the qualified seaman class, provided that (a) he is favourably reported on; (b) he is able to pass a satisfactory examination as A.B. before a naval officer; (c) he is medically fit; (d) he is in all respects qualified. To render a man thus promoted to the qualified seaman class eligible for a pension, he will be required to undergo a further period of six months' training in the Royal Navy, which must not be commenced until two years after the termination of the first period of training. It may be undergone either in one period of six months, or in two periods of three months each, in which case an interval of two years must elapse between the two periods of three months. No man, except under special circumstances, will be accepted for the second or third period of training who is over thirty-five years of age. Seamen, while undergoing naval training, will be paid as second-class Royal Naval Reserve men under the old system, and qualified seamen as first-class Royal Naval Reserve men under the old system. In the event of men of the first class (old system) volunteering for naval training, they will be paid as now laid down in Article 196 of the Royal Naval Reserve Regulations (men), and will, in addition, be granted a naval training gratuity of 10s. a month, which will be paid on completion of the training. If they are satisfactorily reported on and otherwise qualified, they will be rated qualified seamen. Retainers will be continued to men during the period of their training. Promotion from the second to the first class (old system) will now cease, but it will be open to men in the second class to obtain promotion to the qualified seaman class, and subsequently, by further training, to earn a pension in the same manner as the new seaman class. Men of the second class (old system) who have already served six months in the Navy, and are otherwise qualified, will be promoted to qualified seamen. In order to entitle a man to pension he must, if he joined the Reserve when under thirty years of age, have belonged to it for at least twenty years; and if when over thirty years of age, at least fifteen years. Service in the second-class Reserve (old system) or in the seaman class (new system) will count as full time towards pension, but any second-class man (old system) who is over thirty when he becomes a qualified seaman, must serve fifteen years in the qualified class to entitle him to pension. Men who have served in the Royal Navy will be at once enrolled in the qualified seaman class, and will be able to earn a pension by length of service without any further training in the Royal Navy. The following is the revised scale of retainer: (a) For the qualified seaman class and first class (old system), £6 a year; (b) for the seaman class and second class (old system), £3 5s. a year; (c) for firemen—old class, £5 a year; new corps, £6 a year. And the conditions of service have been arranged thus:—Men of the qualified seaman class and of the first class (old system), and A.B.'s of the second class (old system), will receive 1s. 7d. per day. Men of the first class (old system) volunteering for service afloat on and after the 1st April, 1897, will, in addition to their pay, be granted a naval training gratuity of 10s. a month, which will be paid on the completion of their training. If they are satisfactorily reported on at the expiration of the naval training, and are otherwise qualified, they will be rated qualified seamen. Men of the seaman class and of the second class (old system), except those mentioned above, 1s. 3d. a day. Trained men will receive 1d. per day extra. Men who have complied with the above conditions will be entitled to a pension of £12 at the age of sixty.

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In a recent number of *Cassier's Magazine* Sir W. H. White, K.C.B., Director of Naval Construction, gave some interesting details relative to the cost of warships. In 1637 the "Sovereign of the Seas" cost £41,000, half of which was for

labour. This was quite an exceptional outlay, and, no doubt, other than legitimate expenses were charged against that vessel. At the beginning of this century a 100-gun line-of-battle-ship cost from £65,000 to £70,000, exclusive of armament. The 121-gun sailing three-decker of 1837 cost nearly £120,000, and the screw three-decker of 1857 about £220,000. The use of armour added greatly to the cost, and the "Warrior" of 1859 figured up nearly £380,000. The "Dreadnought" of 1873 cost £620,000, and the "Inflexible," which followed her, cost £810,000. These large amounts were partly due to the introduction of costly mechanisms required for mounting and working the heavy guns and partly to large increase in the outlay on armour. Then came the re-action in favour of less costly ships, and vessels were produced for £600,000 to £650,000 between 1875 and 1885. The inevitable tendency re-asserted itself in 1885, the "Nile" and "Trafalgar" each costing about £850,000. The "Royal Sovereign" class of 1889 cost about £775,000, and the "Majestic" about £840,000. All these figures are for ships built in the Royal Dockyards, and exclude incidental charges as well as cost of armaments. They include gun-mountings with their costly mechanisms and torpedo gear. Cruisers have similarly increased in cost. The "Blake" cost about £440,000, or about twice as much as the unarmoured "Inconstant" laid down in 1866. The "Powerful" will cost about £680,000. She carries a considerable weight of expensive armour, and her gun-mountings cost over £50,000. Other Navies spend even more on their units of naval force. A French first-class battle-ship costs about £1,000,000, and so do the corresponding ships in the Russian and Italian fleets. The American battle-ship "Indiana" cost over £600,000, exclusive of armour, and that involved an expenditure of nearly £340,000. For the German battle-ships now building, of 11,000 tons, the estimated cost is about £700,000. It will be seen, therefore, that British battle-ships are, in proportion to their dimensions, less costly than battle-ships of other Navies and actually less costly than most foreign battle-ships of about the same date. The same thing may be said of cruisers. The French "Jeanne d'Arc" is estimated to cost about £800,000; a German first-class cruiser about £650,000; and the American "New York" cost exclusive of armour, etc., about £600,000. The actual costs of the great Russian cruisers are not known, but must reach high figures. As compared with the costs of the largest passenger steamers, the foregoing figures, no doubt, will appear very large. But if deductions are made for the expenses incurred on armour, gun-mountings, and mechanisms, torpedo gear, and special fittings, representing altogether, say, £350,000 to £400,000 in a first-class battle-ship, the comparison is made fairer, and the war-ship approximates in cost very closely to the largest passenger steamers.

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Trials last month took place at Portsmouth of two armour plates, each 8 feet by 6 feet by 6 inches, manufactured by John Brown and Company, Atlas Works, Sheffield, to meet the latest requirements of the Admiralty—namely, that such plates should resist, without serious cracking, five Holtzer steel shot of 6 inches diameter and 100 lbs. weight, striking with the velocity of 1,960 feet per second. These conditions, which are of exceptional severity, were satisfied in the case of both plates. The back of the first showed, on examination, four small bulges and one more considerable one, and was almost free from cracks. The back of the second was found to be equally good, except that one hole appeared in it where an extra shot (making six in all) that was aimed purposely as an experiment at an obvious local defect, just got its fragments into the backing. All the five other shots were destroyed, leaving only shallow indents, and, with the exception of a few superficial hair-lines, the plate was not cracked. The results of the trials were considered to be very satisfactory.

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Messrs. Vickers, Sons, and Co. (Limited) have also had a most successful trial at Shoeburyness lately of a nickel-steel Harveyized armour-plate  $11\frac{1}{8}$  inches



thick, measuring 10 feet by 7 feet, and backed with 12 inches of oak. The trial was to satisfy the conditions of the Admiralty—viz. :—That the plate should stand three shots from a 12-inch gun, two with a striking velocity of 1,850 foot-seconds, and the third with not less than 1,800 foot-seconds, without any part of the plate or projectile being driven completely through the wood backing, or the plate in any way cracking seriously. The result obtained completely satisfied these requirements. The first shot had a striking velocity of 1,861 foot-seconds, the projectile being broken to small pieces and the penetration being only  $2\frac{3}{4}$  inches with no cracks. The second shot gave a striking velocity of 1,868 foot-seconds with practically the same result, the penetration being  $2\frac{1}{4}$  inches. It was then decided, as these two shots had been so successfully kept out, to fire the third shot with a velocity of 1,860 foot-seconds, which was done with the same result as the first two rounds, the penetration being only  $2\frac{1}{4}$  inches. A 12-inch breech-loading-gun was used, firing Holtzer projectiles of 714 lbs. The plate was accepted as having completely fulfilled all the conditions required.—*Times and Naval and Military Record.*

Amongst the papers of Admiral Lord Dartmouth, who lived 1648-1691, and kindly placed at the disposal of the Institution by the present Earl, is a curious invention for visual signalling. It was addressed to Lord Dartmouth when Master-General of the Ordnance, by a certain Thomas Glover, whose plan consisted in the use of four flags, white, yellow, red, and blue, respectively. There was no suggestion of "flag-wagging" as at present practised, but the various letters were formed according to the position in which the flags were hoisted. Thus red, white, blue, and yellow denoted the letter D; white, yellow, red, blue, A; and so on, much in the way that signalling in the Navy was, till up to a comparatively speaking short time ago, carried out.

The following proposals for a new grounding and collision mat, with the accompanying plan, have been submitted by a Captain R.N., at present serving :—

"To be of any practical good, a collision mat should cover a hole made by a collision, or a torpedo, within a very few minutes.

The present mat, 15 feet by 15 feet, would not be of much use under the above circumstances, for, with a large rent it is far too small, and it is not an easy matter to place it quickly and accurately, except for drill purposes. The experiment of unexpectedly opening a bilge injection valve, especially at night-time, and then sounding to collision quarters, might be worth trying.

The proposed mats are to be kept permanently ready for use on the ship's side, and the torpedo nets done away with altogether; for with regard to the latter :—

- a. Cruising at sea off an enemy's port, they could not be used.
- b. In a home port the ship should be quite safe without having nets out.
- c. In an open anchorage, when the ship is disabled, nets might possibly be of use; though it is to be remembered that torpedoes are now fitted to cut through them.

The mats are of two descriptions: the one a mat to be got over at leisure, and called the Thrummed Mat, the other for immediate and temporary use; the latter being rolled up on the outside of the ship, and, in case of collision, or of a rent from the explosion of a torpedo, dropped down at once, thus giving time to get over the thrummed mat and to take further measures for the safety of the ship.

It certainly would be conducive in war-time to a captain's peace of mind to know that, if such a disaster as a large rent was made in the side of the ship, it could be covered over in less than a minute.

It is proposed that battle-ships or first-class cruisers should have five or more temporary mats on each side, always ready for use; smaller vessels in a less pro-

portion, and as each mat is 40 feet long at the head, 26 in depth, and 46 at the foot (so that they overlap each other), the five mats would spread over a length of 200 feet, thus covering the large compartments.

The ends of the ship, by reason of their cellular sub-divisions, can be left, and any rent there covered by the thrummed mat.

The temporary mats to be so fitted that by pulling a lever or cutting strops, they will respectively fall down at once, independently of all lines, etc.

The mat when over would be kept against the ship's side by the water pressure. The thrummed mat can then be got over and secured in a similar manner, as is done with the present mat. The experiment has been tried, at sea, of dropping a sail roughly fitted, and found, as far as could be ascertained, without having a hole in the ship's side, to work very well.

The details, no doubt, can be improved upon; the present suggestions are put forward with a view to the matter being taken up, and some advance being made on the present service collision mat.

*Description of Mat.*—The temporary mats to be of specially-prepared canvas, two thicknesses strengthened with bands.

Head	-	-	-	40 feet	} So that mats shall overlap.
Foot	-	-	-	46 "	
Depth	-	-	-	26 "	

*Head* to have wire jackstay, which can either be attached to bolts in the ship's side, or fitted with three head ropes for hanging mat by when let go, or, if necessary, lowering it down to any depth required.

*Leach* a span with fore and after in it for steadying mat.

*Foot* to have two iron round bars 2 inches in diameter, and each 23 feet long (weight about 460 lbs.), and long lanyards for steadying mat after it is over.

The mats are kept rolled up by chain strops, going over tumblers connected with a bar which slips them, by pulling a lever, or by strops slipped separately.

Brails, or tricing lines, fitted for rolling up, upon the foot, worked on the bight.

The total weight of this mat would be about 7 to 8 cwt., and the cost about £20 per mat.

The thrummed mat to be of the same dimensions, but similar in make to the present service thrummed mat, and kept in position by bottom lines, etc., etc."

**ARGENTINE REPUBLIC.**—The Navy of the Argentine Government has been strengthened by the addition of a vessel which was floated from one of the building docks at Messrs. Laird Brothers' Birkenhead Iron Works, on the 31st August. This ship has been specially designed by the builders for service as a naval training or school ship, and while the work was being done the builders were in constant communication with officers of the Argentine Naval Commission. The vessel has been named the "Presidente Sarmiento." The approximate dimensions are:—Length, 270 feet; beam, 43 feet; and displacement, about 2,750 tons; the draught of water will not exceed 20 feet. The hull is of steel, built with a double bottom, and is very carefully sub-divided into twenty-four principal water-tight compartments, with coal protection along the machinery spaces. The bottom is sheathed with teak to 4 feet above water-line and coppered. The stem, stern, and rudder frames are of bronze. She has a clipper bow, handsome stern with gallery and stern walk, poop, forecastle, and steel-plate bulwarks, the material and workmanship throughout being equal to the requirements of the British Admiralty.

Accommodation is provided for a total number of 400, each rank having separate and specially allocated quarters. She is full "ship rig," carrying a large spread of canvas, as it is intended that she shall do a great part of her cruising under canvas, and in view of this she is fitted with a Bevis's feathering propeller. Boat equipment, including two steam boats, is on an ample scale. The engines are direct-acting inverted triple-compound, driving a single feathering screw propeller

of sufficient power to give a speed of 13 knots. The boilers are four in number, each pair being in a separate watertight compartment with its coal supply. Two of them are of the Niclausse type and two are ordinary cylindrical tubular, and in addition there is a separate boiler for auxiliary purposes.

The distillers are of specially large capacity and are in duplicate. The electric light installation is also in duplicate, whilst there is a powerful refrigerating apparatus and chamber.

The armament includes five 4·7-inch Q.F. guns, two 14-pounder Maxims, four 6-pounders, and four 3-pounders, as well as three torpedo-tubes. There will be two powerful search-lights, as well as special system of signals. The workshops for each class of apprentices and midshipmen are to be supplied with machine tools.

The new armoured cruiser "José Garibaldi," which has only lately arrived from Italy, where she was constructed at Leghorn, has been on shore off Cape Medanos, and is to be sent to Capetown to be docked.—*Times* and *Mittheilungen aus dem Gebiete des Seewesens*.

AUSTRIA-HUNGARY.—On the 18th ult., the birthday of His Majesty the Emperor of Austria, the new torpedo-cruiser "Zenta" was launched at Pola under circumstances of considerable pomp. Her Imperial Highness the Arch-Duchess Maria Josefa, who was accompanied by her husband the Arch-Duke Otto, the Port-Admiral Vice-Admiral Maximilian Freiherr von Pitner, the superintendent of the dockyard Graf Rudolf von Montecuccoli-Polinago, and by a brilliant staff of naval, military, and civil officials, performed the christening ceremony, the service being read by Monsignore Urädniček. The "Zenta" represents a new type in the Austrian Navy, and her dimensions are as follows:—Length, 312 feet; beam, 37 feet 3 inches; with a displacement of 2,326 tons, and a mean draught of 13 feet 4 inches. The ship is built of Siemens-Martin steel, and the whole of the material required in her construction, including her machinery, has been supplied from Austrian industries. The engines are to develop 7,200-I.H.P., giving a speed of 20 knots. The ship will be lighted by 200 incandescent lamps, and there will be two search-lights each of 25,000-candle-power. The armament of the "Zenta" will consist of eight 40-calibre 12-centimetre (4·7-inch) Q.F. guns, made of nickel-steel and mounted on central-pivot cradle-carriages, the guns being so arranged that five can be brought into action on one broadside; they have an initial velocity of 2,300 feet, and the projectiles can pierce a 9-inch steel plate at 1,000 yards; there are also ten 3-pounder Q.F. guns, two machine guns, and seven torpedo-discharges. The ship is called after a town in Hungary of that name, where 200 years ago Prince Eugene of Savoy inflicted a crushing defeat on the Turks.—*Militär-Zeitung*.

The "Wien," a photograph of which forms the frontispiece, although nominally a coast-defence vessel, is in reality a small and formidable battle-ship; she is one of three all of the same type, her sisters being the "Monarch" and "Buda-Pest." Her dimensions are as follows:—Length, 305 feet; beam, 55 feet 9 inches; displacement, 5,550 tons, with a mean draught of 20 feet. Her engines develop 8,500-I.H.P., and she has a speed of 17·5 knots. She has recently been completed at Trieste. In appearance she is not unlike our Admiral class. She carries as her principal armament four 9·4-inch guns, mounted two at each end of the ship in armoured towers. These guns throw a projectile weighing 474 lbs. In the secondary battery amidships are six 5·9-inch Q.F. guns, and there are sixteen smaller pieces of ordnance distributed upon the upper deck and superstructure. She has four torpedo-tubes. The belt of armour, although cut off short at the stern, where it is continued by an armoured deck, is carried right forward to the bows and has a thickness of 10½ inches; above this, thinner plating of 3½ inches thickness protects the secondary battery, and 10½ inches steel also protects the

turrets. At the Jubilee Review she carried the flag of Vice-Admiral Hermann Freiherr von Spaun.

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FRANCE.—The following are the principal appointments and promotions which have taken place: Capitaines de Vaisseau—V. B. F. Constantin to "Formidable"; H. A. Fiéron to be Naval Attaché to the French Embassy in London. Capitaines de Frégate—L. Passerat de Silans to "Fulton"; M. P. Landry to "Achéron"; J. J. P. De Chauliac and J. A. de Surgy to be Capitaines de Vaisseau.—*Le Moniteur de la Flotte*.

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The torpedo-boats mobilised for the manœuvres have been paid off, and the Reservists have been sent to their homes. The first-class battle-ship "Formidable" commissioned at Toulon on the 2nd inst., and will relieve the second-class battle-ship "Redoutable" in the Active Squadron of the Mediterranean Fleet; she has received new boilers, besides having her armament modified, as already reported; but one result of the alterations effected is that her coal-stowage has been reduced from 1,200 to 900 tons; during her two hours' full-speed trial under forced draught she averaged 16 knots, and on her trial with three-fourths of her boilers alight, using coal, the speed maintained was 14 knots; but with mixed fuel—that is, with petroleum injected on to the burning coal—a speed of 15.2 was attained. At Toulon, the first-class cruiser "Alger" has been placed in the second category of the Reserve for repairs; and the "Redoutable," with the coast-defence battle-ships "Indomptable" and "Terrible," is also to be placed in the same category for repairs and alterations, together with the third-class cruiser "Forbin," which has been paid off. The torpedo-avisos "Dague" has relieved a sister-ship, the "Couleuvrine," as guard-ship at Algiers. The torpilleur-de-haute-mer "Corsaire" has been added to the "Défense Mobile" at Toulon. It has been settled that for the future ships on their trials at Brest will make them off the Bay of Douarnenez, where the depth of water is much greater than it is on the present measured mile.

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The Minister of Marine has directed that two Reserve groups shall be formed at Toulon from the following ships:—First Group—battle-ships—"Colbert," "Trident," "Richelieu," "Duguesclin," and "Vauban"; Second Group—armoured gun-boats—"Fusée," "Mitralle," "Grenade," and the transports "Shamrock," "Bien-Hoa," "Mytho," "Nive," "Tonquin," and "Vinh-long." Of these transports the "Shamrock" is detailed for colonial service; the "Gironde" as a squadron torpedo-store ship; the "Bien-Hoa" and "Vinh-long" as squadron store-ships; the "Mytho" as squadron provision-ship, and the "Nive" for the transport of troops. The *Yacht* congratulates itself on Toulon thus possessing two Reserve groups of ships quite competent to defend the adjacent coasts from the attacks of an enemy; forgetting that three of the largest battle-ships mentioned above, the "Richelieu," "Colbert," and "Trident," are old wooden ships with no water-tight compartments.

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The results obtained by the second-class cruiser "Friant" during the manœuvres with the Northern Squadron have been very satisfactory; she is reported to have steamed continuously for six days and nights at a speed of 16 knots, and to have then without stopping increased to 17 knots for a further fifteen hours; she is provided with water-tube boilers. The new second-class cruiser "Cassard" has successfully gone through her preliminary trials off Cherbourg; with the engines making 130 revolutions the highest speed obtained was 20.8 knots; it is hoped that before the trials are finished a speed of 21 knots may be reached. The new third-class cruiser "Galilée," on trial at Rochefort, has realised 6,846 I.H.P., giving a speed of 19.8 knots, the estimated I.H.P. having been 6,400. The new third-class cruiser "Linois," under orders for the Levant, has been delayed at Toulon by defects to the tubing of her boilers. It has been

decided to place her in the second category of the Reserve, and she will be replaced by the third-class cruiser "Lalande." The first-class cruiser "Cécile" has had an unsuccessful trial off Toulon, and had to be towed into harbour.

The accident to the cruiser "Bruix" shortly after leaving Dunkerque with the Presidential squadron for Cronstadt, has caused a great deal of indignation in France, and was certainly a most unfortunate occurrence for the naval authorities; and coming as it did at a moment when they have already been subjected to rather severe criticism, it was the proverbial "last straw," or as the French say, "La goutte d'eau qui fait déborder le vase."

The question has been discussed in the Press whether it would not be preferable to have a civilian at the head of the Admiralty, and in consequence it was at first reported that Vice-Admiral Besnard, Minister of Marine, had sent in his resignation, though this has since proved to be incorrect. In any case, public opinion has been much stirred, and it has been decided that the matter must be sifted to the bottom.

The effect of the accident is described as follows:—Piston rod of port mean pressure engine broken 8 centimetres from the end; cylinder cover smashed in a great many pieces by loose piston.

A court of inquiry has reported that no foreign body was found in the cylinder, and that the accident was not due to priming or excessive pressure, as the vessel was only developing 7,000-I.H.P. at the time, whereas her maximum I.H.P. is 9,000. The court was unable to account for the accident in any other way than by supposing the steel of the rod to be of inferior quality. The rod was sent to Paris for a scientific examination, and the Minister of Marine has, as the result of this examination, since published an explanation of the fracture, viz., that a crack or cleavage has been discovered, extending from the point where the rupture occurred to the lower extremity of the rod, which crack was invisible on the surface.

The first-class aviso "Kersaint" was launched at Rochefort on 28th August, in the presence of Rear-Admiral Boulineau, Acting Maritime Prefect. She is built of steel and sheathed under water with wood and copper. Her dimensions are as follows:—Displacement, 1,245 tons; length, 222 feet 6 inches; beam, 35 feet 9 inches; I.H.P., 2,200; armament, one 12-centimetre (4·7-inch) Q.F. gun, four 10-centimetre (3·9-inch) Q.F. guns, with a complement of 8 officers and 112 men.

Experimental firing to test the effect of shell-fire has been carried out by the battle-ships "Brennus," "Marceau," and "Neptune" off Toulon. The target used was the wooden aviso "Petrel," launched in 1872, which has been struck off the list of the fleet. Some 300 shell were fired charged with black powder, and it is reported that 15 per cent. of hits were obtained. The effects of the explosion of the shell on the target were not so great as had been expected, and they failed to set the vessel on fire, and, though considerably damaged, the "Petrel" was afterwards towed into harbour.

A trial of the booms prepared for the defence of Cherbourg harbour was carried out on the 21st August, in the presence of a Commission, presided over by Rear-Admiral Gigon. Two booms were placed in position in the Western Pass constructed of baulks of timber connected with chains. A torpedo-boat of the mobile defence charged the booms at full speed from seaward, and was successful in crossing the first, but was brought up by the second. Being undamaged, the boat made another trial, and succeeded in crossing both obstacles; at the third trial the boat was stopped by the first boom and received some damage.—*Le Temps* and *Le Yacht*.



The French Naval Manœuvres of 1897 have not been on so extensive a scale as usual; in the Mediterranean this was probably due to some of the cruisers of the Active Fleet being employed in Cretan waters. The composition of the fleet for the manœuvres was given in the July number of the JOURNAL, but it may be as well to repeat it before giving some details of the operations. The naval forces taking part in the Mediterranean comprised:—1. The Active Squadron. 2. The Reserve Squadron. 3. The torpedo-boats of the "*Défenses Mobiles*," of Corsica and Toulon. 4. Four torpilleurs-de-haute-mer mobilised at Toulon, while the semaphore establishments in Corsica, and the 5th Arrondissement were doubled. The Active Squadron, under the command of Vice-Admiral Cavalier de Cuverville, was divided into five different groups:—

- 1st Group—Battle-ships—"Brennus" (flag-ship), "Jauréguiberry," and "Carnot."  
Cruisers—"Cosmao" and "Faucon."
- 2nd Group—Battle ships—"Redoubtable," "Dévastation," and "Courbet."  
Cruiser—"Pascal."
- 3rd Group—Battle-ships—"Magenta," "Neptune," and "Marceau."  
Cruiser—"Wattignies."
- 4th Group—Torpedo-avisos—"Casabianca" and "D'Iberville."
- 5th Group—Torpilleurs-de-haute-mer.

The first period of the manœuvres began on the 5th July, and lasted to the 21st, the Active Squadron operating during this time on the coasts of France by itself; the Reserve Squadron off the Corsican coast, with Ajaccio as its base.

Leaving Toulon on the morning of Tuesday, the 6th July, the Active Squadron, after target practice, exercised at tactics for battle, in which the torpedo-boats took part, a careful note being taken of the number of rounds fired from the ships at each boat, and the length of time the boats remained exposed to fire before being in a position to discharge their torpedoes with success. During the night the squadron was exercised at signalling at various distances; the tactics practised on the following day were much the same, and in the afternoon the squadron anchored off Salins-d'Hyères, the battle-ships in columns of division in line ahead, 400 yards apart, while the cruisers were anchored outside, forming a protecting line some 1,500 yards from the battle-ships. The torpedo-boats parted company and proceeded to Bandol, where they joined the ten boats of the "*Défense Mobile*" from Toulon, in order to make a combined attack during the night on the squadron as it lay at anchor, the whole flotilla being under the command of Capitaine de frégate Grosse. Divided into two groups, the flotilla commenced its attack about 9 p.m.; the night, however, was unfavourable for such operations, as there was a bright moon, in addition to which the search-lights of the cruisers soon had the boats under view, and, although steaming at a speed of 18 knots, the only one which nearly succeeded in getting into a position from which her torpedo might have been successfully launched was the "Kabyle," but, unfortunately for her, at the critical moment a burst of flame from her funnels betrayed her presence. In spite of the high speed at which the torpedo-boats were manœuvring for some hours, no collisions or accidents occurred, except to the "Coureur," whose steering-gear broke down, while some of the tubes of her boilers gave way, and some of her fire-bars were burnt; the "Coureur" was one of the torpedo-boats specially mobilised for the manœuvres. During the 8th and 9th the squadrons were again exercised, firing at moving targets, the Commander-in-Chief taking great interest in the practice; the cruisers were, however, exercised in scouting during the 8th, being detached to observe and report the movements of the Reserve Squadron, which had that morning left Toulon; after following all day and reporting all the movements of the supposed enemy by communicating with the semaphore stations, they rejoined the Admiral off Salins-d'Hyères in the evening, while the torpedo-boats manœuvred by themselves. On the afternoon of the 9th the Light Division was strengthened by the arrival of the first-class cruiser "Alger" from the coast of

Morocco, and the torpedo-boats again parted company, proceeding to join the torpedo-boats of the "*Défense Mobile*" at Toulon, in order to make a combined attack on the battle-ships, which were to blockade the harbour. The attack was made by the boats in five groups as before, as soon as it got dark, but the sea was smooth, the night fine with a bright moon, so it is difficult to say if any success was really achieved. The next morning the squadron again anchored in Hyères Roads. On the 10th the ordinary routine drills were carried out. On the evening of Sunday the 11th the squadron weighed, proceeding to sea without showing any lights, and at 2 a.m. on the 12th were again attacked when off Ciotat by the torpedo-boat flotilla. It is reported that the "Éclair" succeeded in torpedoing the "Brennus" twice; but as a rule the boats were discovered by the search-lights before they could approach. However interesting these exercises are, it is wrong to draw any definite conclusions in favour of the torpedo-boats from them. Until they make their attacks really under fire, it is impossible to say whether they will succeed or not in their attempts to sink the larger ships. The only thing which has been proved is the power of the officers in command to handle them successfully at high rates of speed, and the endurance of the men has been put to a severe and successful test. It is in these qualities that we trust for success, when the time of trial comes. The squadron returned to Toulon on the 13th, where it remained over the National Fête on the following day. The squadron left Marseilles again, at 9 o'clock, on the morning of the 15th July, proceeding to Salins-d'Hyères, where it anchored; the Third Division, consisting of the battle-ships "Magenta" (flag), "Marceau," and "Neptune," under the command of Rear-Admiral Dieulouard, however, were ordered to cruise, starting from Marseilles, within certain limits marked on the chart. At 4 o'clock on the morning of the 16th, Vice-Admiral de Cuverville ordered the light ships of the squadron to weigh and scout for the Third Division. They left under the command of Captain Bretzel, of the "Pascal," in a fresh north-easterly gale, and with a sea sufficiently rough to prove inconvenient to the smaller vessels; about 5.30 p.m., however, the "Casabianca" sighted the supposed enemy, with whom touch was maintained during the night, cruisers being detached successively to communicate the movements of the hostile squadron to the Commander-in-Chief at Salins-d'Hyères. While the cruisers had thus been employed, the other two divisions of the battle-ships, anchored in line ahead east and west of the entrance to the roadstead, were again attacked about 11 p.m. by the Toulon torpedo-boat flotilla coming from Lavandon. Each torpedo fired was fitted with a collapsible head, and before the moon rose a certain measure of success attended the attacking boats, as several of the heads were recovered completely smashed in, showing that some of the ships must most certainly have been struck. On the 18th the squadron proceeded to Villefranche to coal and obtain other supplies, the Third Division, with the "Alger" and "Pascal" proceeding to Marseilles for this purpose. The First Division refilled their bunkers from a collier, experimenting with the Temperley apparatus, each ship of the division, beginning with the "Carnot," proceeding to sea for the purpose, and steaming at a speed of 8 knots, while the coaling was proceeding; the "Brennus," however, had to return to the anchorage to complete, in consequence of the heavy sea running. On the 21st the whole fleet re-assembled at Salins-d'Hyères, and on the 23rd again proceeded to sea, being attacked during the night by the torpedo-boats of the squadron and those of the "*Défense Mobile*," combined for the purpose; on the evening of the 24th the fleet anchored off Saint-Tropez and proceeded to defend the entrance by means of mines and booms. On the morning of the 25th the combined operations between the Active and Reserve Squadrons commenced.

During this period the Reserve Squadron under the command of Vice-Admiral Humann had been exercising independently off Corsica. The squadron consisted of three divisions:—

## First Division—

Battle-ships — “Amiral-Duperré” (flag-ship of Commander-in-Chief) and “Indomptable.”

## Second Division—

Battle-ships — “Friedland” (flag-ship of Rear-Admiral Mallarmé) and “Terrible.”

## Third Division (Light)—

Third-class Cruiser — “Milan,” and torpilleurs-de-haute-mer “Orage,” “Aventurier,” “Dragon,” and “Chevalier,”

the two last mobilised for the manœuvres. Leaving Toulon on the morning of the 8th July, the blockade of which the admiral was supposed to have forced, he arrived before the roadstead of Rousse Island on the following morning. Here a landing was effected, the semaphore stations destroyed, and the telegraphic communication with the mainland cut. In the afternoon the squadron proceeded along the coast of Corsica, and during the following night was attacked by the torpedo-boats of the Corsican “*Défense Mobile*,” in the course of which the “Dragon” and boat “180” broke down in their machinery, while “97” ran ashore, sustaining some slight injuries to her hull. On the 10th the admiral anchored off Saint-Florent, proceeding on the 13th to Ajaccio for the National Fête, and remaining there till the 15th.

On the 15th the squadron left Ajaccio, and on the night of 18th-19th forced the Straits of Bonifacio, in order to reach Bastia. The two sides of the Straits were watched by the torpedo-boats of the “*Défense Mobile*,” who were to protect their friends, attack the enemy, and not molest neutral vessels. For this purpose the squadron was formed into three groups; the Second Division, steaming at 10-knot speed, represented the enemy; the First Division, steaming at 6 knots, were friends; while the “Milan,” steaming at 8 knots, represented a neutral mail steamer passing the two divisions without answering any signal. The object of the exercise was to give the torpedo-boats practice in reconnoitring and signalling, as in war-time terrible mistakes might be made, if at night they were to attack without making sure that the vessels attacked were hostile. Torpedo-boat “169,” which attempted to torpedo the “Friedland,” broke down, and had to be towed back to Ajaccio. The squadron anchored off Bastia, and coaled there, using the Temperley apparatus. On the 25th the squadron weighed again, and the combined manœuvres of the two fleets began.

The theme of operations was as follows :—The Reserve Squadron (representing an enemy) being off the east coast of Corsica, attempts, on the night of the 25th, either by passing to the north of Cape Corsica or through the Straits of Bonifacio, to reach a strategical point on the coast between Marseilles and Mentone with the intention of bombarding it. The operation was to be considered successful, if the squadron could remain four hours before the point selected without being interfered with by the defending fleet, represented by the Active Squadron. The Active Squadron was to try and prevent the enemy succeeding in his attempt, and the operations were to come to an end at 8 a.m. on the 27th.

Leaving on the morning of the 25th, as has been already stated, Vice-Admiral Humann, commanding the Reserve Squadron, sent his Light Division, consisting of the “Milan” and torpilleurs-de-haute-mer on ahead, with orders to mislead, if possible, the cruisers of the Active Squadron, in regard to the course pursued by the battle-ships. About 10 p.m. these small ships sighted and gave chase to the “Casabianca,” “D’Iberville,” “Sarrazin,” and “Coureur,” of the defending force; these latter being overmatched, stood to the north and were soon lost to view; so the “Milan,” with her small consorts the “Chevalier,” “Dragon,” “Orage,” and “Téméraire,” shaped course again for Toulon, where they arrived unmolested by the enemy on the 26th towards midnight.

Vice-Admiral de Cuverville, commanding the defending force, and who was lying off Saint-Tropez, on his part also on the morning of the 25th ordered his cruisers, which now consisted of the "Latouche-Tréville," "Alger," "Pascal," "Cosmao," "Wattignies," "Casabianca," "D'Iberville," and "Lévrier," with the torpilleurs-de-haute-mer "Kabyte," "Éclair," "Forban," "Sarrazin," and "Coureur," to weigh at 7 a.m. and proceed to search for the enemy, and, if they found him, to keep the Commander-in-Chief informed of his movements. At 4 p.m. on the same day they arrived in sight of Cape Corsica, and echeloned themselves on the meridian of the cape in a line covering from 25 to 30 miles from North to South, the avisos and torpedo-boats being detached to scout in other directions; the night was fine, and the sea smooth. It was hoped by these dispositions to prevent the enemy's squadron from passing to the north of the island without being seen, while the "Lévrier" with the torpedo-boats of the "Défense Mobile" of Corsica had orders to watch the Straits of Bonifacio and report immediately by telegraph any signs of the enemy, while all the semaphores on the island and mainland were also at the disposal of the defenders for the transmission of information. The defending battle-ships were lying—five in the Gulf of Juan, and four off La Ciotat.

As already reported, about 10 p.m. four of the smaller cruisers fell in with a superior force of the enemy, and had to retreat, the "D'Iberville" steaming for the Gulf of Juan to inform Admiral Cuverville of the course which it was believed the enemy was taking. The next morning, the larger cruisers, which had altered their position and were now cruising on a course to intercept the enemy if he came through the Straits, about 9.30 a.m. sighted the hostile battle-ships steaming in a north-westerly direction, having apparently for their objective of attack some point situated to the west of the Gulf of Juan; the "Wattignies" was accordingly detached to Calvi to inform the semaphore station and also telegraph to the Commanding Admiral, while the other vessels took up positions, so as to keep in close touch with the enemy and lose none of his movements, the "Pascal" and "Latouche-Tréville" keeping to the southward, the "Linois" ahead to the west, the "Alger" astern, and the "Cosmao" to the north. When he saw himself discovered, Admiral Humann altered his course to the west; all day the defending cruisers kept touch with him, but as soon as night had fallen he altered course suddenly to the north, passed between the "Alger" and "Cosmao," and although apparently seen for a moment under the search-lights of the "Alger," his squadron was soon lost in the darkness, and at 3 a.m. of the 27th he arrived at Villefranche, off which port he remained the four hours laid down by the instructions, without being molested by the defending force, whose cruisers that night, except the "Alger," continued steering tranquilly to the west. In the meantime Admiral de Cuverville, on the morning of the previous day (the 26th), receiving contradictory reports as to the movements of the enemy, had left the Gulf of Juan and proceeded to Salins-d'Hyères, sending his Third Division, under Rear-Admiral Dieulouard, to cruise along the coast to the westward. At 4 o'clock the next morning the "Alger," which had succeeded in once more gaining touch with the enemy, hove in sight, reporting that the hostile squadron was off Villefranche, but it was then too late for the defending force to do anything to prevent the success of the raid. There seems no doubt that there was a very careless look-out kept by the cruisers of the defending squadron during the night of the 26th-27th, or the enemy could not have slipped through in the way he did, and it is also difficult to understand why he was not perceived and no attack made upon him by the torpedo-boats stationed in the Straits of Bonifacio, through which he passed, or by those the following night attached to the defending cruisers. On the 28th the two squadrons weighed in company and exercised at steam tactics, anchoring again in the evening; weighing again in the morning, the day was again spent at tactics, and the next day the fleet returned to Toulon, and the grand manœuvres came to an end.—*Le Yacht and La Marine Française.*

We must defer to next month the description of the manœuvres carried out by the Squadron of the North in the Channel.

GERMANY.—The following are the principal promotions and appointments which have been made: Rear-Admirals—Bendeman to command of Second Division of First Squadron; H.R.H. Prince Henry of Prussia to be Inspector of the First Naval-Inspection; Hoffmann to command of Second Squadron (specially formed for the manœuvres) and of the Third Division; von Arnim to command of Fourth Division. Captains—Geissler to be Inspector of Marine Artillery; O. von Schuckmann to command of Heligoland; Diederichsen to "Weissenburg"; Fritze to Chief of Staff of First Squadron; von Frantz to Chief of Staff of Baltic Division; Stubenrauch to "Kaiser"; Galster to "Kurfürst Friedrich Wilhelm"; von Eickstedt to "Mars"; Schmidt to Chief of Staff of North Sea Division; Oelrichs to "Stein"; von Dresky to "Brandenburg"; Breusing for service at Ministry of Marine; Stiege to "Baden"; Graf von Baudissin for service at the Ministry of Marine; and von Ahlefeld to Superintendent of Kiel Dockyard. Corvette-Captains—Poschmann to command of First Torpedo-boat Flotilla; von Colomb to command of Second Torpedo-boat Flotilla; H. Gercke, A. Paschen, and Ingenohl for service at Ministry of Marine; Wahrendorff to "Oldenburg"; Plachte to "Baiern"; Truppell to "Prinzess Wilhelm"; Etienne to "Württemberg"; Follenius to "Gefion"; Obenheimer to "Irene"; Mandt to "Bussard"; Sommerwerck to "Jagd"; Schwartzkoff to "Habicht"; Schneider to "Greiff"; I. Schröder to "Wolf"; Jacobsen to be Chief of Staff of Second Squadron; von Holtzendorff and Scheder to be Captains.—*Marine Verordnungsblatt*.

The fleet assembled for the Autumn Grand Manœuvres, which began on the 16th August, is constituted as follows:—

First Squadron under command of Vice-Admiral Thomsen.

First Division—

First-class battle-ships—"Kurfürst Friedrich Wilhelm" (flag-ship of Commander-in-Chief), "Brandenburg," "Weissenburg," "Wörth."

Despatch-vessel—"Jagd."

Second Division—

First-class armoured cruiser—"König Wilhelm" (flag-ship of Rear-Admiral H.R.H. Prince Henry of Prussia.

Third-class battle ships—"Sachsen," "Württemberg."

Despatch-vessels—"Greif," "Blitz."

Second Squadron under command of Rear-Admiral Hoffmann.

Third Division—

Fourth-class battle-ships—"Hildebrand" (flag-ship), "Siegfried," "Frithjof," "Beowulf."

Despatch-vessel—"Pfeil."

Fourth Division—

First-class armoured gun-boats—"Mücke," (flag-ship of Rear-Admiral von Arnim (second-in-command), "Natter," "Skorpion," "Krokodil."

Despatch vessel—"Grille."

First torpedo-boat flotilla—Division-boat D "2" (flying Senior Officer's Pennant).

A Division—D "9," Nos. "74," "76," "77," "78," "79," "80."

B Division—D "3," Nos. "24," "25," "26," "27," "28," "29."

Second Flotilla—Division-boat D "1" (flying Senior Officer's Pennant).

C Division—D "4," Nos. "33," "34," "35," "36," "38," "40."

D Division—D "8," Nos. "67," "68," "70," "71," "72," "73."

Admiral Knorr, the commanding admiral of the Navy, has, as usual, taken the supreme command of the fleet and hoisted his flag this year, on the 16th ult.,



on board the torpedo-school ship "Blücher," instead of the gunnery-school ship "Mars," on board which he has usually flown it. The admiral has at his immediate disposal for despatch service the third-class cruiser "Gefion," the gunnery-school ship "Carola," the cadet training-ships "Charlotte" and "Stein," with the despatch-vessel "Blitz." No division has this year been formed out of the training-ships, as two, the "Gneisenau" and "Nixe," have already left for their winter cruise. The total number of vessels taking part in the manœuvres is 55, with 8,257 officers and men.

The following changes will be made when the manœuvres are brought to a close at the end of September. The first-class armoured cruiser "König Wilhelm," the third-class battle-ships "Sachsen" and "Württemberg," the fourth-class battle-ships "Ægir," "Hildebrand," and "Beowulf," the armoured gun-boats "Natter," "Krokodil," and "Scorpion," the despatch-vessels "Grille," "Zieten," and "Blitz," and the surveying-vessel "Albatross," will all be paid off. The places of the "König Wilhelm," "Sachsen," and "Württemberg," in the Second Division of the First Squadron, will be taken by the third-class battle-ships "Baiern," "Baden," and "Oldenburg," which have received new boilers, and during the last two years been completely overhauled and repaired. During the coming winter the "Kurfürst Friedrich Wilhelm" (flag-ship of the First Squadron) and the "Brandenburg" will make their headquarters at Wilhelmshaven, while the "Weissenburg" and "Wörth," the other two ships of the First Division will be at Kiel. Under the orders of the Admiral commanding the Baltic Division will also during the winter be at Kiel the third-class cruiser "Gefion," the despatch-vessel "Pfeil" for fishery duties, and the fourth-class battle-ships "Hagen" and "Heimdall" of the Reserve Division. Under the orders of the Admiral commanding in the North Sea will be placed the second-class cruiser "Kaiserin Augusta" (at present in the Mediterranean) and the fourth-class battle-ships "Frithjof" and "Siegfried" of the Reserve Squadron. At the disposal of the head of the Gunnery School will be the school-ships "Mars" and "Carola," with the "Ulan" and "Hay" as tenders; for the torpedo-school will be the school-ships "Blücher" and "Friedrich Carl" with a torpedo-boat flotilla and other small vessels. The armed transport "Pelikan" and the "Otter" will be at the disposal of the marine dépôt; while at Dantzig will be the "Mücke" as the central ship of the armoured-gun-boat Reserve Division. Altogether, in the Baltic command will be 10 battle-ships, 5 armoured gun-boats, 10 cruisers, 1 gun-boat, 5 despatch-vessels, 11 training-ships, and 7 special-service vessels; while in the North Sea command will be 8 battle-ships, 8 armoured gun-boats, 5 despatch-vessels, 6 training-ships and 3 special-service vessels. These 89 war-ships have a displacement of 272,956 tons, engines developing a total of 314,530-I.H.P., and carry 22,774 officers and men.

Some successful experiments have been carried out with a new smokeless powder for small-arms, manufactured by the Forster Company. The properties of the new powder are said to offer a sufficient guarantee that it will remain effective in all climates.

The number of recruits for the Navy for the year 1897-98 has been increased: from the land population 2,484 instead of 1,960 (the number last year), and from the sea-faring population 2,283, as against 2,103, will be drawn, a total of 4,767, being an increase of 704. The total *personnel* of the fleet for 1897-98 is 23,302 officers and men, as against 21,942 last year, made up as follows:—1,135 officers of all ranks, 952 warrant officers, 4,437 petty officers, 16,178 seamen, and 600 boys. There are on the officers' list at present 1 admiral, 3 vice-admirals, 10 rear-admirals, 40 captains, 77 commanders, 630 captain-lieutenants, lieutenants, and sub-lieutenants, 40 officers of marine infantry, 102 engineers, 122 doctors, and 86 special-duty officers, with 88 paymasters, 67 midshipmen, and 70 cadets.

The new fourth-class battle-ship "Ægir" has successfully completed her trials, and they have been watched with much interest, as she is the first ship in the Imperial Navy fitted with water-tube boilers, which are of the Thornycroft type. There have been no mishaps during the six months over which the trials have extended, and the boilers, which weigh 50 tons less than the locomotive ones in the other ships of the class, have given the greatest satisfaction to the authorities; while the ship maintained a speed of 17 knots on her forced-draught trial. She is also the first vessel in the Navy which has been fitted with a complete electric installation, in connection with the guns, ammunition hoists and other work requiring motive power.—*Neue Preussische Kreuz Zeitung and Marine Rundschau.*

## MILITARY NOTES.

### PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING AUGUST, 1897.

General Sir H. E. Wood, V.C., G.C.B., G.C.M.G., *p.s.c.*, Quartermaster-General, to be Adjutant-General to the Forces from 1st October; Lieut.-General (local General) Sir G. S. White, V.C., G.C.B., G.C.I.E., to be Quartermaster-General to the Forces from 1st October; General W. D'O. Kerrich, Royal (late Madras) Artillery, retired, to be Colonel-Commandant, R.A.; Lieut.-General (local General) Sir G. S. White, V.C., G.C.B., G.C.I.E., Commander-in-Chief, India, to be Colonel, Gordon Highlanders; Major-General (Hon. Lieut.-General) F. W. Traill Burroughs, C.B., to be Colonel, Royal Warwickshire Regiment; Major-General M. W. E. Gosset, C.B., *p.s.c.*, to command the Dublin District; Colonel (Brigadier-General, India) A. G. Yeatman-Biggs, C.B., R.A., to be Major-General; Colonel W. F. Gatacre, C.B., D.S.O., *p.s.c.*, to command 3rd Infantry Brigade, Aldershot, with temp. rank of Major-General; Colonel F. Ventris, *p.s.c.*, A.A.G., Madras, to be a Brigadier-General on the Staff to command the troops in Bombay; Colonel Sir H. C. Chermiside, K.C.M.G., C.B., R.E., to be Colonel on the Staff to command the British troops in Crete; Colonel E. S. Creek, *p.s.c.*, half-pay, to command the 23rd Regimental District; Surgeon-Major-General J. G. Faught, retired pay, to be Hon. Surgeon to the Queen.

The office of Adjutant-General to the Forces, to which General Sir Evelyn Wood succeeds on the 1st October, is one of great antiquity. It was first added to the Standing Army in 1673. There is a warrant, among the War Office Records, dated 23rd December, 1673, respecting shipping and quartering of troops, addressed to "E. Roufousse, Esqre., Adjutant-General to Our Forces." The office was shortly afterwards dropped until 1680, on the establishment list for which year appears one "Adjutant-General assigned to Thomas Daniell for resigning his commission of Lieutenant-Colonel of Our Own Regiment of Foot Guards." In 1684 there was still but one adjutant-general, a Captain Staples, and he was "of the horse"; but, in 1686, there was one adjutant-general of the horse, and another of the foot. There were two in Ireland in 1690 during the war, and one was permanently attached to the establishment of that kingdom in 1697. In the Dublin State Papers is a Royal Warrant, dated 17th May, 1697, for the establishment of "an Adjutant-General to Our Army in Ireland, to commence from 1st May." The Adjutant-General's relation to his chief corresponded with that of an adjutant to his colonel—that is, he was his assistant or "aide," relieving him of the more laborious details of his duties, and forming the medium of communication with the troops on any matter of discipline generally, or of tactical movements.

It is said that the "Adjutant-General to the Forces" had the charge of all matters relating to the discipline, arming, and clothing of the troops, and was responsible for the regulations and orders to the Army, issued from time to time

with the King's sanction. Before the appointment of a Commander-in-Chief, the Adjutant-General's correspondence was confined to the Army in Great Britain, and the discipline of the troops in the field, other matters being sent to the Secretary of War. About the year 1778, the Adjutant-General occupied two rooms in Crown Street, Westminster, and, like the Quartermaster-General, acted under the Secretary of War; but, after 1793, he was attached to the staff of, and reported on all matters of military detail to, the Commander-in-Chief. From the system inaugurated in 1795, the department of the Adjutant-General assumed a new and more important character. The Army was remodelled, and special and confidential reports of the conduct of each regiment, and the officers in it, were made to him. General regulations were issued to all the forces, laying down one uniform system of discipline. The returns of the Army, formerly few in number and inaccurately made, were largely increased and carefully prepared by civil assistants, then introduced, that the information required by Parliament might be supplied through the Adjutant-General's Department with accuracy. In the year 1807 an addition was made to his duties by the abolition of the office of Inspector-General of Recruiting, and the transfer of the work to the Adjutant-General's Department. He thus had the arrangement and regulation of the recruiting service of the Army. By the Order in Council of the 21st November, 1895, the Commander-in-Chief was relieved of the discipline, education, and the training of the troops, which were transferred to the Adjutant-General. The present duties of the Adjutant-General are defined by the above Order in Council: "He shall be charged with the discipline, military education, and training of the officers, warrant officers, non-commissioned officers, and men of the Regular and Reserve Forces and Militia of the United Kingdom, and of the Yeomanry and Volunteer Force of the United Kingdom when subject to military law or when assembled for training, exercise, inspection, or voluntary military duty; with patterns of clothing and necessaries, and with the maintenance of returns and statistics connected with the *personnel* of the Army; with enlisting men for, and discharging men from, the Regular and Auxiliary Forces; with annually submitting proposals for the establishments for all the above Services. He shall advise the Secretary of State on all questions connected with the duties of his department, and, in the absence of the Commander-in-Chief, he shall act for him." The following officers have held the post in the present century:—Lieut.-General Sir Harry Calvert, Bart., G.C.B., 1799-1820; Major-General Sir Henry Torrens, K.C.B., 1820-28; Lieut.-General Sir Herbert Taylor, G.C.H., 1828-30; Lieut.-General Sir John Macdonald, G.C.B., 1830-50; Lieut.-General Sir George Brown, G.C.B., 1850-53; Major-General Sir George Cathcart, K.C.B., 1853-54; Lieut.-General Sir George Wetherall, G.C.B., 1854-60; Lieut.-General Hon. Sir James Yorke Scarlett, K.C.B., 1860-65; Lieut.-General Lord William Paulet, K.C.B., 1865-70; General Sir Richard Airey, G.C.B., afterwards Lord Airey, 1870-76; General Sir C. H. Ellice, G.C.B., 1876-82; Major-General Sir Garnet Wolseley, G.C.B., 1882-84; General Sir R. C. H. Taylor, K.C.B., acting for a short time in 1882 during Sir Garnet Wolseley's absence in Egypt; Lieut.-General Sir Archibald Alison, Bart., K.C.B., 1885; General Viscount Wolseley, G.C.B., etc., 1885-90; and General the Right Hon. Sir Redvers H. Buller, V.C., G.C.B., etc., 1890-97.

The subject approved for the Duncan Gold Medal Prize Essay of the Royal Artillery Institution for 1898 is "The Advantages and Disadvantages of Quick-firing Guns for Artillery in the Field." The rules of the competition are:—The annual gold medal, when awarded, to be accompanied by an honorarium of £20; the silver medal by an honorarium of £10. The candidates must be officers of the Royal Artillery, who are members of the Royal Artillery Institution. Officers are requested to confine their essays to about sixteen printed pages of the Institution's Proceedings. The essays must be forwarded to the secretary so as to reach him on or before April 1st, 1898.

The Council of the Royal United Service Institution of India have chosen as the subject for their Gold Medal Essay for 1898 the following :—"The Creation and Maintenance of a Reserve of Officers for the Indian Army." The candidates must be members of the Simla Institution, and their essays (which are limited to 16,000 words) must be received on or before the 1st March, 1898.

Several patterns of valise equipment have been put on trial lately, including those introduced by the present Deputy Surgeon-General W. S. Oliver, and Major-General R. D. Barrett, late 2nd Bn. Yorkshire Regiment. The "Oliver" is an improvement on the one of that name which was tried about sixteen years ago in the 52nd Light Infantry and 1st Bn. Rifle Brigade. The "Barrett" equipment was introduced in 1882, but was discarded in the Foot Guards and Line in favour of the "Slade-Wallace," though it is carried in the Militia to this day. The "Barrett" valise, now under trial, claims to be an improvement in many respects over the original invention, and it is generally favourably reported on. The "Slade-Wallace" pattern, now in general use in the Service, is not liked by the men. Unless the pouches are filled it does not balance, and the great-coat drags on the waist-belt; so to counteract this fault the belt has to be so tight that it seriously interferes with the soldier's comfort. Its weight is considerable in proportion to the amount of kit which it carries; it is complicated in construction, and occupies some time in cleaning. The ammunition cannot be carried conveniently without the kit to balance, any more than the latter can be conveniently carried without the ammunition. When the men are at the double the valise is most uncomfortable as it flops about on the back. A battalion to which it has just been issued complains that it is not nearly so good or so comfortable as the old "Barrett" equipment.

During the late Ashanti expedition, Major-General Sir Francis Scott, the staff officers, medical officers, and others reported very favourably of certain consolidated soups supplied by a company, known as the Portable Food Company. They are said to have stood the climate very well, resisted rough usage, and were not affected in the least by the damp. Since then certain officers, out of curiosity, have tested them under various climatic and other conditions, and the result may be interesting. They are reported as being very useful on long marches on account of their cheapness, portability, and sustaining powers. They have been subjected to chemical and microscopical examinations, and are believed to be sound and good. They have been tested by Militia and Volunteer battalions in camp and on the march, and, as Lord Roberts recently remarked, are likely to prove "useful in the highest degree to soldiers." After long marches they were easily and quickly prepared, and are said to have been much liked by the men.

It is announced that a captain or a lieutenant of not less than eight years' commissioned service of the Regular Forces may be permitted to retire from the Army on being appointed to a commission in the Militia of the United Kingdom. While serving in the Militia under such commission he will, for a period not exceeding ten years, receive temporary retired pay at the rate of £100 a year. This retired pay will not be issued for any year during which the officer shall not attend the training of his Militia regiment, unless he be excused from such attendance on account of sickness certified by the regulated medical authority.

ABYSSINIA.—The Army of Abyssinia is based on the feudal system; that is to say, every noble, landowner, or man in authority has a certain number of armed followers whom he is bound to produce for war when called on by the King or by his representatives. Latterly, the system has been somewhat changed, and Menelik has embodied part of the feudal retainers as a permanent army.

To understand this system, it is necessary to glance at the general government of the country.

The whole of Abyssinia is divided into provinces, each governed by a Ras, or by some smaller official. Under the feudal arrangement, each province produces an army, commanded by the Ras, or Governor, and consisting of numerous contingents from the province, combined together in different sized units, and each headed by its own chief.

Formerly, this provincial army was only called out when required for war or other purposes. Now, however, a certain proportion of it, the number being fixed by the Ras, is permanently embodied, and acts as the garrison and standing army of the province. These garrisons united form Menelik's new creation. The chief drawback to this arrangement is that such a decentralised army cannot afford to Menelik the same support as one which is under one head and one direction, especially as several of the Rasas are by no means distinguished for their loyalty. However, it is no doubt of value that there should be men in each province available as soldiers at a moment's notice, and the Emperor appears to be satisfied with the result.

Although this system is not in the least comparable with any European one (except, perhaps, the Montenegrin), the two divisions thus formed may be given European names, calling the one just described the Standing Army, and the remaining horde of able-bodied retainers the Militia.

The only practical difference between these two is that the men composing the former are permanently embodied and paid, whilst those of the latter are only called out in case of war, and in no case receive any pay, only loot. Otherwise there is no difference in organisation, arms, hierarchy, or otherwise.

The pay of each man of the Standing Army is nominally \$10 a year (\$1 = about 2s. 3d.), besides occasional clothes and food for himself and forage for his horse, should he have one. As a matter of fact, he rarely gets more than \$4 or \$5 a year. His allowances amount only to 7 handfuls of grain per month,  $3\frac{1}{2}$  for his wife and  $1\frac{1}{2}$  for each child, and these are not always paid; he, therefore, procures the necessary food by raiding and robbery. The pay of the officers is higher, and may range up to £10 a year.

The combined forces of the Standing Army amount to over 70,000 men; those of the Militia to quite 140,000 more. The following is the approximate distribution of the total forces:—

Men.	Including rifles.	Approximate position.
40,000	{ 25,000 to 30,000 }	South-Eastern.
40,000	25,000	East Central.
20,000	20,000	South-Western frontiers.
6,000 )	3,000	Northern.
to )		
8,000 )		
8,000	6,000	North Central.
10,000	6,000	Central, including Antotto.
16,000	12,000	North-East Central.
6,000	4,000	Western Tigré.
4,000 )		
to )	1,000	Eastern Tigré.
5,000 )		
6,000 )		
to )	3,000	North-Eastern Tigré.
8,000 )		
30,000	20,000	West Central.
8,000	2,500	South-West.
10,000	1,500	Southern.
12,000	6,000	South-Eastern frontiers.
Totals { 216,000	135,000	
to	to	
220,000	140,000	



The above numbers include all the Abyssinian fighting men who could be raised within a month or so, but do not include a large number of Gallas and others, slaves, servants, peasants, etc., who could be forced into the ranks in time of national danger, and would make efficient spearmen.

For purposes of comparison, it may be stated that the number of men who took part in the recent campaign against Italy, which terminated in the disaster of Adua, was estimated at close on 200,000, of whom nearly three-quarters were armed with rifles.

The ranks and hierarchy in the Army are as follows :—

1. Melik.—King: commands the combined Abyssinian forces.
2. Ras.—Governor of province, general of an army.
3. Lukúmukas.—Equerry: there are only two of these; they may wear the same dress as the King, excepting the crown. In action their duty is to wear the royal dress so as to attract the bullets from their master to their own devoted bodies.
4. Dejzmach.—Shortened, as a title, to Dejjaj, literally, "door ruler"; a general.
5. Fitaurari.—Literally, "horn of a rhinoceros"; commander of the advanced guard, corresponds more or less to brigadier-general.
6. Bejirondi.—Two of these only; they are a species of Royal Transport and Engineer officers. The first, B. Balcha, is in charge, on a campaign, of the treasury, and B. Katamma transports Menelik, his baggage, and his suite; they have a roughly-organised transport corps for these duties, and advise on roads, line of march, etc.
7. Kanyzmach.—Ruler of the right wing.
8. Gerazmach.—Ruler of the left wing.

These two are equal in rank, and roughly correspond to our rank of colonel.

9. Balámbaras.—Literally, "head lord of a fort" or fortress commander; does not necessarily stay in a defensive position, but takes the field.
10. Yeshambal.—Captain of 1,000.
11. Mato.—Captain of 500.

Captains of 250, 100, and 50, and smaller units have no distinctive titles.

The head of the artillery has the title of Tob-basha.

The titles of Ato (Aito, Atu, Ito) and Lij (Lig or Lik) are met with, but are not military. The former corresponds to our "Mister," and the latter to an esquire who possesses a certain amount of land.

The word Shûm means civil governor of a district.

The above ranks, although thus laid down in order of precedence, are not always so in practice; it depends on the strength and number of followers of the person in question. Thus, although each Ras is supposed to have under him a Dejzmach and a Fitaurari, and each of the latter a Kanyzmach and Gerazmach of his own, still, in certain cases, a Fitaurari may be more powerful than a Ras, and even a Balámbaras may command more men than a Dejzmach, although nominally far below him.

None of these titles are hereditary, though, as a rule, a Dejzmach's son is, on his father's death, given the title of Fitaurari. The King has absolute power in distributing ranks and titles, and may elevate or degrade any man in the kingdom according to his own will and pleasure.

Roughly, a Ras will command from 5,000 to 40,000 men; a Dejzmach or Fitaurari, 3,000 to 10,000 men; a Kanyzmach, Gerazmach, or Balámbaras, 2,000 to 5,000 men.

There is no organised division into the three arms, as in Europe. Every man is a foot soldier, unless he happens to possess a horse; the horsemen being gathered together under chiefs, and forming a species of cavalry. The artillery is nearly all at the capital, and gunners are trained as occasion serves. There

are no engineer, transport, or medical arrangements; an attempt has, however, been made at organising a commissariat.

Although there is no division into regiments, battalions, and companies, Abyssinian troops can be quickly got into roughly organised masses, and move over the ground with great rapidity. The directed movements of large bodies of men—it cannot be called drill—are carried out largely with the assistance of the voice and the stick. Numerous small chiefs receive their orders from the head of their unit, and proceed to carry them out by running up and down shouting and hammering out their men in the required formation or direction. This process is effective, and is an improvement on the old plan whereby men followed their chiefs in masses without semblance of order.

The Abyssinian soldier's arms are the rifle and the sword; often a shield is carried as well.

Practically every man has a rifle; nearly every system of single-loader is represented. The larger proportion of rifles are Remingtons, then come Gras, Vetterli-Vitali magazine rifles, and Berdians; amongst other systems are Chassepots, Mausers (single-loaders), occasional Winchesters and Peabody-Martins, Martini-Henrys being rare and much prized, and here and there a Kropatschek. With the exception of the Vitalis mentioned above and taken at Adua, there are very few repeating rifles in the country; this, no doubt, is owing to their price being higher and few being on the cheap market.

A good many old muzzle-loaders, mostly in the last stage of decay, are to be found in the ranks.

The chiefs carry carbines, Winchesters, or other rifles, many carrying sporting single-loaders. The rifles are badly kept, most of them being rusty or clogged with mud and dust. To save the trouble of cleaning out the barrel, the muzzles are corked up with bits of wool and rag or tufts of grass.

The bayonet is not used, except occasionally as a side-arm in lieu of a sword.

The Abyssinian soldier is not a good shot. Every man carries a belt full of cartridges, but he is not particular whether they all fit his rifle. A variety of kinds are carried by most men, some cartridges even being dummy ones and others having no powder in them. This custom arises from the universal one of using cartridges as small change (15-17 to a dollar), so that a buyer cannot be certain of receiving rounds of the right bore for his rifle; also many dishonest persons extract the powder and bullets, or fire off the cartridge, filling up with dummy powder and bullet before passing it on as coin.

Ammunition stores exist in all the provinces, and from these cartridges would be issued in time of war. The position of these stores is kept very secret, and in some cases it is death to approach them.

The cavalry is chiefly composed of Galla horsemen; their arms are rifle, throwing-javelin, shield, and spear for close work. Their organisation and discipline are of the loosest, but they are said to be dashing horsemen and good reconnoiters. The horses are poor-looking, but hardy. Owing to the universal introduction of rifles, the cavalry is not now so numerous as formerly, and is reported not to exceed 5,000 altogether.

The artillery consists of about fifty-three modern and thirty old guns, mostly small mountain guns.

These are nearly all kept in the arsenal at Addis Abbaba.

The gunners belong to the Transport Corps of the Bejirondis above mentioned, and do not get much training, for the guns are almost always housed, and there is but little ammunition as yet.

Every Abyssinian who can afford one carries a sword, worn on the right side. The usual shape is highly curved, and sharpened on both sides, with no guard. The object of this sickle-shape is to cut over the adversary's guard with the concave edge on to his head and neck; it is, however, a cumbrous weapon, and only of use for cutting, not for pointing or parrying, which, indeed, no Abyssinian

ever does. The sword is drawn from its leather scabbard by a back-handed motion of the right hand, elbow outwards. The handle is made loose, so as not to interfere with the twist of the wrist in changing edges. The steel is very fair.

Other shapes are longer and straighter; the dervish cross-handle sword is much esteemed, and the Italian infantry officer's sword is becoming popular.

The Abyssinian wears no knife, and uses his sword for everything, from killing people down to cutting a beefsteak or a pencil.

The Gallas and other natives, who wear no sword, usually carry a Danâkil knife in their belt; this knife has a strong curved blade of about 10 inches, the handle being generally ornamented with brass wire.

The Abyssinians proper do not use spears. The Gallas, however, being debarred from the use of rifles, make use of this weapon. As a rule, it is about 7 feet long, coarsely made, and with a laurel-leaf shaped head.

The shield is circular, convex with a boss in the centre, and usually made of buffalo or oxhide. It is tough and hard, and easily turns a sword cut.

The shields of the chiefs are generally ornamented with silver, usually a present from the King as a mark of distinction. In the case of Rases and other high functionaries where the King wishes to do them honour, he presents them with a shield covered with purple or black velvet, and embossed in gold.

The Abyssinian soldier's dress is the ordinary native one; he has no uniform or badge of rank. It consists of a pair of linen trousers reaching half-way down the leg, and a shirt of the same material coming down to the knees. Besides these, he generally has a sheet or "shamma," of white stuff wound round him, and over his shoulders. If he can afford it, he wears a "jano," i.e., a shamma with a broad red stripe; this is of thin native woollen stuff, and is very warm. In cold or wet weather, those who can afford it wear a hooded cloak of brown goat's hair; this costs two dollars, and makes an excellent greatcoat.

These clothes are never washed, and they soon assume a dingy brown hue. The hair is cut short, and no head-dress, stockings, or shoes are worn.

The higher officers wear the same dress, with the "jano," and generally a cloak of dark-coloured silk; they also wear a white or coloured handkerchief tied tight round the head, and hanging down behind; bare legs. On special occasions, a silk shirt (kamis), generally striped in different colours, is worn, with a "jano" according to circumstances, and a "gôfer," or decorated and embroidered cloak, or a lion's-skin. In the King's presence, or in church, the jano must be worn over the Kamis round the waist, and flung from behind over the right shoulder; the salute being given by taking the end off the shoulder. On these occasions, too, a brilliant-coloured silk handkerchief encircles the head.

In war-time the Kamis is always worn, covered with a "lamd," or plain skin or cloak; in action the jano is discarded. Badges of rank there are none, but to those who have distinguished themselves in war, or lion or elephant hunting, decorated shields, cloaks, and lions'-skins are given. A man who has distinguished himself in battle, or slain a lion or an elephant, receives an aureole of lion's-mane. Exceptional deeds in the field or in the seat of government may also bring as rewards gilt armlets and coronets. But the highest honour of all is the "kûfta," a hat shaped like a brimless top-hat, and ornamented with gold or silver. This distinction is given only for valour, and carries with it a gold or silver shield, and an ornamented sword scabbard. The scabbard is enriched by silver bands, nominally one for each five men killed.

It is to be noted that, whatever his rank, every officer carries a rifle or carbine, besides a sword.

Few revolvers are carried, and these few are all of the cheap French pattern.

With the troops many flags are generally carried, each consisting of three triangular pennons of red yellow, and green, respectively, nailed on to a long, thin, and generally crooked staff. These flags are for show only, and do not denote companies or units of any kind.

In order to feed his new Standing Army, Menelik has given orders for food to be collected at various centres, and then distributed to the men.\* This arrangement is for the purpose of preventing the robbing and raiding of inhabitants for food, as has hitherto been the case.

Accounts seem to agree that large bodies of men could be mobilised and concentrated at required spots in comparatively short spaces of time, and that apparently disorganised masses would quickly, in the hour of action, resolve themselves into more or less coherent units, and obey the voice of their leaders.

The tactics of the Abyssinians are directed towards encircling an inferior enemy with greatly superior forces, reserving their fire till close quarters are reached, and then attacking on all sides at once. They appear rarely to attack unless in greatly superior numbers.

The Shoan soldier is of medium height, averaging 5 feet 7 inches or so, broad-shouldered and sturdy. His features are negroid in character, and though the nose is generally straight and well formed, and the facial angle fairly Caucasian, his hair is woolly and his lips are thick; his complexion is the colour of mud. His habits are dirty in the extreme; his head is generally covered with rancid butter and other inhabitants, and he never washes. He is an excellent and rapid marcher, and can live on next to nothing. No food for two or three days is not by any means an uncommon hardship to him, but at the same time it must be allowed that, given the opportunity, he will gorge himself to repletion with meat and beer and get drunk whenever occasion offers. His natural instincts are savage, and although Menelik does his best to stop them, horrible cruelties on defenceless prisoners, women, and children, come natural to him. As regards discipline, he obeys his leader through fear, or when the orders chime in with his own inclinations; he is also said to be obedient in action. He looks upon highway robbery and the raiding of villages in search of food as a natural pursuit, and does not understand being checked for so doing. His reconnoitring and spying work is good, but his shooting powers are poor.

Accounts vary as to the physical courage of the Abyssinian soldiers. The general consensus seemed to be that as long as they were numerically superior they would attack with great dash, but that if vigorously opposed they would not persevere.

This view seems to be borne out by recent events; as long as they are raiding defenceless villages, or shooting down at long range unfortunate and rifleless natives—their usual method of conducting war—they are full of dash. If, however, they find a vigorous opposition, they lose heart and soon retreat.<sup>1</sup>

The reasons for their great victory at Adua appear to be their immense numerical superiority, the fact that the whole nation was fighting for its existence, and the extraordinary and fatal mistakes made by the Italians in pushing forward one brigade far ahead of the others into the enemy's position, whereby it and the others which came up singly to assist it were destroyed in detail, whilst there was no intercommunication between the different parts of the force. It will be noticed that though the Abyssinians numbered nearly 100,000 to 16,000 of the Italians in this battle, they did not dare to attack the enemy, but waited until he advanced against an impossible and unreconnoitred position.

Eye-witnesses state that in the rout which followed the cavalry pursued with vigour as long as the enemy was on the run, but that if only a small body of Italians halted and faced round on them, they did not dare to attack.

The Abyssinians allow that they were so short of food and the necessities of life, that they would have been forced to retire within a week without fighting. A severe murrain had also broken out amongst the mules and horses, not touching the donkeys, and disease and starvation was rife among the troops.

3,500 Abyssinians were killed at Adua, and thousands more wounded.

<sup>1</sup> Vanderheyms "Expédition avec le Négous Ménélik, 1894," gives an excellent account of the Abyssinian method of conducting war.

Menelik, during the action, made strenuous and successful efforts to organise rough dressing stations, food, water, and surgical assistance for the wounded.

FRANCE.—During the manœuvres of the 1st and 2nd Army Corps, a company of cyclists is to be organised in two groups, and to be attached to the 1st and 2nd Brigades of cavalry respectively. There will also be a mobile pigeon-house, which will be used for carriers to keep up a quick and constant connection between the advanced troops and the main body. The invited officers stay at Cambrai for the period of the operations, and the band of the Douai School of Artillery will be in attendance. The orders for the movements of the troops are not to be published beforehand, but will be issued by the commander from day to day.—*Avenir Militaire*.

GERMANY.—The manœuvres of the 15th Army Corps come to an end on the 17th inst. The opinion in France seems to be that the German manœuvres are designed principally to educate the commanders, and that they are not at all intended to benefit the private soldiers. There is no doubt, however, that the work is most instructive to all ranks. Specially interesting is the programme for the cavalry brigade, consisting of lancers and hussars, at Hagenau. All troops return to their garrisons not later than the 18th September.—*Avenir Militaire*.

The Mounted Chasseurs, who have just been established, are now at Hagenau, waiting for the completion of the quarters destined for them at Colmar.—*Revue du Cercle Militaire*.

The optic telegraph has been in operation this year in the German manœuvres, and has proved to be extremely useful. The duties connected with it were entrusted to the Railway Corps.—*Revue du Cercle Militaire*.

ITALY.—The Italian grand manœuvres, to which reference has already been made, are to be held during two periods, at the second of which the King and the War Minister will be present. The troops consist of an independent cavalry division, the 3rd Army Corps, the 5th Army Corps, and a division of Militia. The manœuvres will be concluded on the 21st inst.—*Revue du Cercle Militaire*.

RUSSIA.—The remount question is causing some interest in Russia. It is considered there by the best authorities that the horses are too few for the needs of the Army, in the event of a great war. It is not considered that the quantity is so much at fault as the quality. The small horses of the Steppes, whatever their power of endurance may be, cannot be thought equal to the duty of carrying a heavy cavalry soldier. It is thought that the breed may be improved by judiciously crossing it, but no expedient of that kind will be of any avail unless proper breeding-grounds be selected. In the south of Russia there are lands where any number of troop-horses could be produced, but it is not to be expected that in the colder Northern Steppes the war-horse for a European Army can be found in sufficient numbers.

The camp of Krasnoe Selo was the scene of an interesting military display in honour of the French President. The Russian Guards and other troops took part in the review. Many officers and soldiers had to be accommodated under canvas and in the neighbouring villages, but all sanitary arrangements are said to have been excellent. After the review, Prince Alexander of Oldenburg, a former commandant of the Guards, handed over a sum, the interest of which is to be given in prizes to deserving soldiers.

The approaching manœuvres of the Russian Army are to be held in the neighbourhood of Astulewka and Lomja. The East and West Armies are to engage on the river Narew. The final engagement will be in the vicinity of Bielostock, where Junot had his quarters in 1807.—*Avenir Militaire*.



## NAVAL AND MILITARY CALENDAR.

AUGUST, 1897.

- 2nd (M). Chakdara, Chitral, relieved by Colonel W. H. Meiklejohn's brigade, and the tribal gathering dispersed.
- 3rd (Tu). Military Manœuvres Bill passed final stage in the House of Lords.
- " " 450 men, 2nd Bn. Royal Welch Fusiliers arrived in Crete from Malta in the troop-ship "Tyne."
- 5th (Th). King of Benin surrendered at Benin City to the Acting British Resident.
- 6th (Fri). H.M.S. "Satellite" paid off at Sheerness.
- 7th (Sat). Capture of Abu-Hamed, Soudan, by the Egyptian force under Major-General A. Hunter, D.S.O.
- " " H.M.S. "Flora" left with relief crew for the "Barrosa" at the Cape.
- 8th (S). News received that the Mohmands, on the Afghan frontier, had attacked the fort at Shabkadar; a force was sent against them.
- 9th (M). Commencement of Irish manœuvres.
- 10th (Tu). Mohmand raiders routed by a force from Peshawur.
- " " H.M.S. "Raccoon" arrived at Plymouth from the Cape.
- " " H.M.S. "Whiting," "Foam," "Shark," "Virago," and "Quail" commissioned.
- 11th (W). Conclusion of the Langeberg campaign, South Africa.
- 12th (Th). Large reinforcements sent to the Afghan frontier in view of further disturbances.
- " " H.M.S. "Hotspur" commissioned at Sheerness.
- 14th (Sat). Conclusion of Irish manœuvres.
- " " 2nd Bn. Royal Berkshire Regiment received orders for South Africa.
- 16th (M). Commencement of Aldershot manœuvres.
- " " H.M.S. "Empress of India" left Plymouth for Mediterranean.
- 17th (Tu). Occupation of Landakai, Upper Swat Valley, by Sir Binden Blood's force.
- 18th (W). Launch of torpedo-cruiser "Zenta" at Pola for Austrian Navy.
- " " H.M.S. "Rocket" commissioned at Devonport.
- " " Sir Binden Blood's force marched to Ghalegui, and found the villages deserted.
- " " International review of troops at Canea, Crete.
- " " Issue of Parliamentary Paper "South Africa, No. 6, 1897," on the Benin Expedition.
- 19th (Th). H.M.S. "Hazard" commissioned at Plymouth.
- " " H.M.S. "Blanche" paid off at Plymouth.
- " " H.M.S. "Leander" and "Virago" left Plymouth for the Pacific.
- 23rd (M). Soudan Railway completed to 137 miles.
- " " Attack on the station of Ali Musjid and Fort Maude by the Afridis.
- " " Fort Maude evacuated by its garrison of Khaibar Rifles.
- " " Three Mahomedan Baluchee chiefs arrested at Quetta.
- " " H.M.S. "Royal Sovereign" left Portsmouth for the Mediterranean.
- 24th (Tu). H.M.S. "Sparrowhawk" commissioned at Devonport to take place of "Thrasher," and "Fame" at Chatham to take place of "Shark."
- 25th (W). Conclusion of Aldershot manœuvres.
- " " Ali Musjid, at the entrance to the Khaibar Pass, evacuated by its garrison of Khaibar Rifles.
- " " Landi Kotal Serai, captured by the Afridis, through the treachery of its garrison of Khaibar levies,



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## NOTICES OF BOOKS.

*From Manassas to Appomattox: Memoirs of the Civil War in America.* By JAMES LONGSTREET, Lieutenant-General, Confederate Army. Philadelphia: J. B. Lippincott and Co., 1896.

The reminiscences of soldiers who have seen much active service are always fascinating reading. Even if the writer played but a minor part in some famous campaign, the realistic touches of a personal narrative give a life and spirit to the picture of events which is necessarily absent from more elaborate compositions. Especially fascinating are the recorded experiences of those who have held high command. On this side of the Atlantic they are rare. If we except Lord Dundonald and Lord Roberts, our own great men of action have consistently ignored the curiosity of future generations. In America it has been different. With the exception of Lee, almost every single soldier of fame who survived the Civil War has written his own story of his campaigns, and General Longstreet's book is the latest addition to a most valuable series. It is not the least interesting. It embraces many of the more important battles. It commences with the first Confederate victory, and concludes with the surrender at Appomattox, nearly four years later. It is concerned with both the eastern and western theatres of war; and the author probably saw as much fighting as any soldier in either Army. He was a conspicuous figure throughout the war. He had the highest reputation for tenacious courage. His men were devoted to him. For three years he commanded the 1st Army Corps, the right wing of the famous Army of Northern Virginia, and during part of that time he was practically General Lee's second in command. While Stonewall Jackson lived he was not the first to be consulted, but his relations with his chief were always intimate. When, on June 1st, 1862, General Lee assumed command in the field, he invited Longstreet, the next in seniority to himself, to communicate his ideas on the conduct of the campaign then in progress; and from first to last he appears to have initiated few important movements without taking the opinion of his subordinate. It was expected, then, when General Longstreet first announced his intention of committing his experiences to paper, that much would be revealed as to the working of the higher Staff, the handling of the Confederate Armies, the difficulties with which General Lee had to contend, and the reasons which dictated his manœuvres. These expectations have certainly been fulfilled. The General is by no means reticent as to what occurred at the Confederate headquarters; and he takes care to inform us that the crude strategical conceptions of the Confederate President were always a deadweight on the genius of the great soldier who served the South with such patient loyalty to constituted authority.

But it is not only as regards the conduct of the Government that General Longstreet brings us behind the scenes. His descriptions of the various battles in which the 1st Army Corps played so distinguished a part are full and spirited. They do full justice to the fiery courage of the Confederate private, to the stubborn endurance of the Northerner, and to the high soldierly qualities displayed by so many of the generals. But their chief interest lies in the fact that we are admitted to the councils which preceded the great engagements, that we learn on what information, on what estimate of the enemy, each important manœuvre was based; that we stand side by side with the generals in action, and see the great game played from the first card to the last. General Longstreet hardly writes with a facile pen. But, despite a certain awkwardness of style, his battle-

pictures are well drawn. Nor can it be imputed as a fault that he makes no attempt to gloss over the blunders inherent in all military operations, that he gives his enemies due credit for skill and valour, and that his criticism is impartially distributed. Unfortunately, however, whenever he deals with incidents of which he was not an eye-witness, his statements are altogether at variance with the Official Records—that is, with the contemporary reports of officers who *were* eye-witnesses. In fact, it is perfectly apparent that General Longstreet has been content to trust his memory, that he has often relied on hearsay evidence, and has made but little attempt to investigate the truth. This blemish affects both his narrative and his criticism. The former, when his own actions are concerned, can seldom be accepted without reservation; the latter is often based on false premises, and is consequently of little value.

General Longstreet has not developed the critical habit since Appomattox. Throughout the war, whatever movement was in contemplation, he had generally something better to suggest. Even when victory was achieved he was seldom satisfied. Had his advice, he implies, been taken, success would in almost every case have been more decisive; and the most brilliant *manceuvres*, whatever their result, were never exactly to his mind. It is true that the majority of Confederate soldiers have never accepted General Longstreet at his own valuation. Not only, on the one occasion when he held an independent command, did he miss success, but his own shortcomings when serving under Lee have been exposed with unsparing severity. His political conduct during the reconstruction of the South alienated his former comrades, and no mercy has been shown to the soldier who labours under the accusation of having lost Gettysburg, the great battle which turned the tide of war in favour of the North. The Memoirs before us are practically an attempt on the part of General Longstreet to answer the charges with which he has been assailed, and his method of defence is decidedly peculiar. In reply to the criticism which has been lavished on his own conduct, he retorts by criticising with unsparing severity the conduct of Lee, Jackson, and Early; and by endeavouring to show that other generals, better known to fame, committed far more glaring blunders than the commander of the 1st Army Corps.

We cannot think that General Longstreet consulted his own dignity in adopting this line of defence. He would have been better advised had he confined himself to a statement of facts, and have left it to others to determine whether his military ability was equal to that of Lee or Jackson. Nor are we of opinion that his attitude towards his great commander and his former colleagues becomes his reputation as a soldier. When he discusses the question whether Lee's strategy was not overbold, whether he was not too fond of fighting, although we by no means agree with him, we follow him with interest; but, when the friend and comrade of Lee and Jackson accuses the former of deliberate misrepresentation, of favouritism, of bloodthirstiness, and of hiding his own mistakes by throwing the blame on others, and when he goes out of his way to catalogue the tactical shortcomings of the latter, we follow him with regret. Space forbids that we should deal with General Longstreet's charges against his colleagues. But we may say at once that his list of Jackson's blunders is almost ludicrously inaccurate. His statements are refuted, in many instances, by the Official Records; in others, a reference to any one of the surviving members of General Jackson's staff would have put him right. Moreover, in his endeavour to belittle Jackson he has been hoist with his own petard; and it is exceedingly interesting to find, after all these years, that he was the real author of the Confederate defeat at Malvern Hill—a defeat which has hitherto been considered, and with justice, the greatest blot on Lee's reputation as a tactician.

"General Lee," writes Longstreet of July 1st, 1862, "rode near Jackson's column to view the enemy on that front. Feeling unwell and much fatigued, he called me to temporary duty near him. As he rode to the left he ordered me . . . to make reconnoissance of the enemy's new position . . . and to

report the feasibility of aggressive battle . . . I thought it probable that Porter's (Federal) batteries, under the cross fire of Confederate batteries posted on his left and front, would be thrown into disorder, and thus make way for the combined assaults of the infantry. I so reported, and General Lee made dispositions accordingly." The most important part of this plan was that Jackson should deploy 80 to 100 guns along his front, and General Longstreet still thinks it was perfectly feasible for him to have done so. Herein he differs radically from General Pendleton, Lee's Chief of Artillery. That officer reported that "the obstacles presented by the woods and swamps made it impracticable to bring up a sufficient amount of artillery to oppose successfully the extraordinary force of that arm employed by the enemy, while the field itself afforded us but few positions favourable for its use, and none for its proper concentration." The map itself is sufficient to prove the fallacy of General Longstreet's idea. Even in those days of muzzle-loaders, batteries could hardly have come into action within six or eight hundred yards of a strong line of artillery, heavily supported by infantry, and occupying a commanding position with an absolutely clear field of fire.

The further accusations against Jackson are even more extraordinary. He comments on Jackson's apparent inaction at White Oak Swamp, June 30th, 1862, at the time when Longstreet and A. P. Hill were fighting a desperate battle at Frayser's Farm, only four miles distant. Surely he must be aware that General Lee was present at Frayser's Farm, and that if he had thought Jackson's presence desirable it would have been exceedingly easy to call him up. The fact is that Jackson remained at White Oak Swamp, by General Lee's direction, in order to secure the Confederate left.

In his account of the action of Mechanicsville, he declares that Jackson "deliberately marched past the Federal flank half-a-mile or more behind the battle" without taking part in the engagement; and to support this opinion he represents on his map that Jackson moved by Shady Grove Church road. As a matter of fact, Jackson himself, and the greater part of his force, moved by a wood more than two-and-a-half miles north of the Federal flank, and it was not till very late in the evening, just before dark, that he heard the sound of guns. The mishaps on June 26th were not due to Jackson at all, but to the failure of the staff to maintain communication between columns that were widely separated in dense forest. General Longstreet, it may be noted, is the first and only soldier in all America, North or South, to accuse the fiercest fighter in either army of a disinclination to join battle.

Again, General Longstreet suggests that the great counter-stroke at Manassas, August 30th, 1862, made by his troops, would have been more effective had Jackson aided him with greater energy. What are the facts? General Longstreet's troops, when the counter-stroke was initiated, were perfectly fresh—they had hardly fired a shot. Jackson's men, on the other hand, had been fighting the whole Federal Army, just three times their strength, for two days, and were completely exhausted. Does General Longstreet wish us to believe that any troops in the world, under such conditions, would be capable of delivering a strong counter-stroke? The wonder is that the men found strength to advance at all.

The most astonishing assertion (page 407), however, is that Jackson was at the battle of Sharpsburg only two-and-a-half hours, while he (Longstreet) was there all day. We confess that we read this statement with amazement. The first and the most vigorous attack of the Federals, which began at 5 a.m. and which did not cease until after 9 a.m., was repulsed by Jackson. The great counter-stroke delivered by M'Laws and Walker was made by Jackson's order, and when that energetic effort failed to crush the enemy the troops remained in position, not for two-and-a-half hours, but until after night-fall the next day, and during that whole time Stonewall Jackson never left the field. One of his divisions was undoubtedly driven back, and another, which was well-nigh annihilated, was suffered to withdraw when the attack ceased; but the General himself remained

with the reinforcements, supervising all arrangements and exercising every single function of command. In fact, General Longstreet, in his anxiety to disparage his great colleague, contradicts himself. On page 257, he says that General Jackson had an interview with him during the afternoon.

But we are weary of exposing these misstatements. Stonewall Jackson's reputation will suffer nothing from such loose criticism; and we may turn at once to Gettysburg, for it is in the account of that momentous battle that the interest of the *Memoirs* culminates.

General Longstreet discusses the campaign at great length, and his defence of his own conduct fills many pages. This defence, however, is by no means satisfactory. In the first place, he tells that when the invasion of Pennsylvania was first broached he assented to General Lee's plan on the condition that the tactics of the Confederates should be purely defensive; but he makes no attempt to explain on what grounds he considered himself entitled to dictate conditions to his superior officer. He had no mandate from the Government to act as Lee's adviser. He was merely the commander of an army corps—a subordinate, pure and simple; and yet he appears to have entered on the campaign with the idea that the commander-in-chief was bound to engage the enemy with the tactics that he, General Longstreet, had suggested. In the second place, he does not appear to have grasped the drift of the charges which have been brought against him. The question is not whether the manœuvres suggested by Longstreet would have been more successful than those executed by General Lee, but whether the general commanding the 1st Army Corps did everything which lay within his power to carry out, loyally and unhesitatingly, the wishes and instructions of the commander-in-chief of the Confederate Army.

The manœuvres preliminary to the battle were decidedly to the advantage of the Confederates. Lee moved with such rapidity through Pennsylvania that he was far to the north-east of Washington before his columns were threatened by the enemy's advance. On 1st July he found a Federal force on his right flank. His advanced troops forced an encounter, and two Federal army corps were driven back to a strong position at Gettysburg, covering the direct road to Washington. During the evening Lee and Longstreet reconnoitred the ridge occupied by the enemy. They were aware that no more than 20,000 Federals were on the ground, while 40,000 of their own men, flushed with victory, were already present. Longstreet writes:—

After our survey I said: "We could not call the enemy to position better suited to our plans. All that we have to do is to file round his left, and secure good ground between him and his capital." This, when said, was thought to be the opinion of my commander as much as my own. I was not a little surprised, therefore, at his impatience, as, striking the air with his closed hand, he said, "If he is there to-morrow I will attack him." His desperate mood was painfully evident, and gave rise to serious apprehensions.

From the outset, therefore, there was a decided difference of opinion between the commander-in-chief and his subordinate. The former, finding his advanced guard had already won an important success, and that the enemy was not yet concentrated, determined to attack. The latter thought it sounder tactics to turn the Federal left, and to occupy a defensive position which, in his opinion, the enemy would be compelled to assault. Undoubtedly, although such a manœuvre would have given the enemy time to concentrate, and they were stronger by 25,000 men than the Confederates, there is something to be said in favour of General Longstreet's idea. Further discussion, however, on this point would be beside the mark. The fact remains that on the morning of July 2nd the Confederates had a fine opportunity of dealing with their enemy in detail. The attack, however, was deferred until three o'clock in the afternoon, by which time nearly the whole of the Federal Army had come up. Why was the opportunity lost?

General Longstreet admits that on the evening of July 1st he was aware of

Lee's intention to attack the next morning. Without waiting further instructions, he had ordered his own army corps to hasten the march, and two of his divisions and part of his reserve artillery had arrived by sunrise. But he adds that he received no orders to attack until an hour before noon.

We have not the slightest doubt that this account is literally correct. Nevertheless, General Longstreet's explanation of the delay is altogether inadequate. If words mean anything, he implies that General Lee, and General Lee alone, was responsible for the delay. But there is a mass of evidence which goes to show that General Lee considered Longstreet responsible; and this evidence the latter has certainly not refuted. In the first place, there can be no question whatever that he was well aware that Lee expected him to attack as early as practicable on the morning of July 2nd. In the second place, it is certain that Lee explained his wishes, although he gave no definite orders, soon after sunrise, that he even pointed out the ground to be taken up by Longstreet's divisions; and that, riding off afterwards to the left, he expressed much uneasiness, shortly after 9 o'clock, when he found that Longstreet made no move. In the third place, General Longstreet himself, in a letter which he wrote some years ago to the *Philadelphia Weekly Times*, has cited evidence which shows that he took upon himself to resist the expressed wishes of the commander-in-chief.

Not one of these points is touched upon in the Memoirs. General Longstreet is content with the assertion that until 11 o'clock he had received no definite order to attack. But it was never Lee's practice to issue definite orders to his corps commanders. He was accustomed to explain his general intentions, and to leave the execution in their hands; and if on this occasion he departed from his usual custom it was because Longstreet declined to move without explicit orders to that effect. Moreover, Longstreet had not waited for orders to call up his troops the night before, nor, as he tells us in the Memoirs, had he waited for orders to make the great counter-stroke which was decisive of the second battle of Manassas. On both these occasions he acted in accordance with the *wishes* of the commander-in-chief, and even anticipated them. Why did he not do the same on the morning of July 2nd?

On that morning there can be no question but that Lee's wishes were very clearly expressed. General M'Laws, commanding a division of the 1st Army Corps, says that he reached the field *at a very early hour*; that he went to Lee, who pointed out to him on the map the road across which he was to place his division, and said that he wished him to deploy without being seen by the enemy; that the line pointed out was that which he occupied when the attack began between 3 and 4 p.m., and that "Longstreet was then walking back and forth some distance from General Lee, but came up, and, pointing to the map, showed me how he wanted the division located, to which General Lee replied, 'No, General, I wish it placed just the opposite,'" and that "Longstreet appeared as if he were irritated and annoyed." It is a most significant circumstance that General Longstreet makes no allusion in his Memoirs to a letter which he quoted in the *Philadelphia Weekly Times*. This letter, written by General Hood, one of his divisional commanders, runs as follows:—

I arrived in front of the heights of Gettysburg shortly after daybreak on the morning of July 2nd. During *the early part* of the same morning we were both in company with General Lee. . . . General Lee was seemingly anxious you (Longstreet) should attack that morning. You thought it better to await the arrival of Pickett's division—at that time still in rear—in order to make the attack, and you said to me subsequently, "The General is a little nervous this morning; he wishes me to make the attack; I do not wish to do so without Pickett. I never like to go into battle with one boot off." Thus passed the forenoon of that eventful day.

In our opinion General Longstreet has failed altogether to shift the burden of the responsibility for delay from his own shoulders. He was aware that Lee



was anxious to attack as early as practicable. He was aware that an early attack was essential to success. He was aware how the commander-in-chief desired his divisions should be placed ; and yet until he received a definite order to advance did absolutely nothing. He made no attempt to reconnoitre his line of march, to bring his troops into position, or to initiate the attack in accordance with the expressed intentions of his superior.

His conduct on the third day opens up a still graver issue. The 1st Army Corps, when at length, on the afternoon of July 2nd, it was permitted to attack, had achieved a distinct success. The enemy was driven back to his main position with enormous loss. On the morning of July 3rd Lee determined to assault this position in front and flank simultaneously ; and, according to his chief of the staff, Longstreet's corps, supported by a division of the 3rd Corps, was to make the main attack on the centre, while the 2nd Corps attacked the right. But again there was delay, and this time it was fatal. General Longstreet attempts to make some capital out of the fact that General Lee, in his official report, wrote as follows :—"Longstreet, reinforced by Pickett's three brigades, which arrived on the battle-field during the afternoon of the 2nd, was ordered to attack *the next morning*." This, says Longstreet, "is disingenuous. He did not give or send the orders for the morning of the third day, nor did he reinforce me with Pickett's brigades for morning attack." And yet, a few lines further on, he writes :—"He (Lee) rode over after sunrise and gave his orders. His plan was to assault the enemy's left centre by a column to be composed of M'Law's and Hood's divisions (Longstreet's corps) reinforced by Pickett's brigades. I thought it would not do." Passing by the fact that it was never Lee's plan to assault the centre only, but both centre and flank simultaneously, we may note that, according to Longstreet's own testimony, the order was given soon after sunrise ; and yet, although the 2nd Corps, attacking the Federal right, became engaged at daylight, it was not till 1 p.m., eight hours later, that the artillery of the 1st Corps opened fire, and not till 2 p.m. that the infantry advanced. Their assault was absolutely isolated. The 2nd Corps had already been beaten back. The 3rd Corps, although a division was ready to move to any point which Longstreet might indicate, was not called upon by him for assistance. Two divisions of his own corps, posted on the right flank, did absolutely nothing ; and, after a supremely gallant effort, the 15,000 men who were hurled against the front of the Federal Army, and some of whom actually penetrated the position, were repulsed with fearful slaughter.

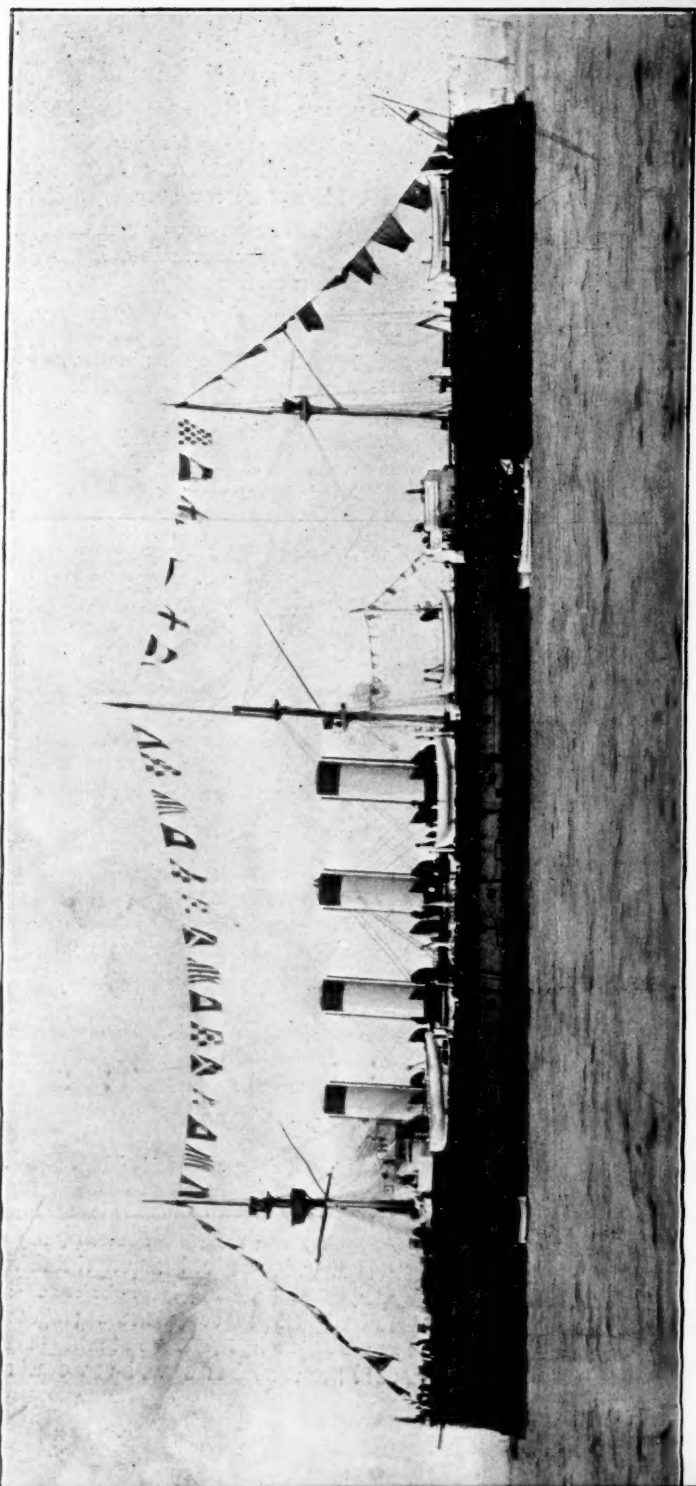
General Longstreet is of opinion that, even if his assaulting column had been composed of 40,000 men, success was impossible. Taking into consideration the conditions under which the attack was made, he is possibly correct. But he altogether ignores the fact that Lee intended his assault to be made in combination with the attack of the 2nd Corps. Why did the combination fail ? Shortly after sunrise on July 3rd, Lee committed the management of the attack on the Federal centre to the officer commanding the 1st Army Corps. Did that officer do all within his power to insure combination and to deal a vigorous and decisive blow ? These are the questions which General Longstreet has failed to answer. That his tactics were indifferent seems abundantly clear. Why did the divisions on his right make no energetic demonstration ? It is true that they were confronted by superior numbers ; but a semblance of attack would in all likelihood have sufficed to distract the enemy's attention from the assaulting column. Why did he not call upon the division of the 3rd Corps, which had been placed at his disposal ? He had been reluctant to attack on the second day "with one boot off" ; why did he display less caution on the third day ? If, however, it was only his tactical judgment that was at fault, he hardly deserves reprobation. Greater generals than he have committed more glaring blunders in less difficult circumstances. But the crucial question is this : *Why did he delay his attack for eight hours, during which time the 2nd Corps, with which he was to co-operate,*

was heavily engaged? If he moved only under compulsion, if he deliberately forbore to use his best efforts to carry out Lee's design, and to compel him to adopt his own, the case is very different. That he did so seems perfectly clear, and it is impossible for any sane soldier to justify such conduct.

General Longstreet defends himself by reflecting on the conduct of the commander-in-chief. Not only, according to his account, was General Lee "excited and off his balance, and labouring under that oppression (*sic*) until blood enough was shed to appease him," but he did not "give the benefit of his presence in getting the troops up, posting them, and arranging the batteries." Lee, however, had the whole field to supervise, and it was not his custom, when once he had indicated the object to be attained, to interfere with his subordinates. No man, indeed, could post troops or arrange batteries with more skill than Longstreet, and Lee no more thought of interfering with his dispositions at Gettysburg than he had with his dispositions at the second battle of Manassas. Nor will such arguments, however they may be taken, mitigate the following:—"General Lee said that the attack of his right was not made so early as expected, which he should not have said. He knew that I did not believe that success was possible; that care and time should be taken to give the troops the benefit of positions and the ground; and he should have put an officer in charge who had more confidence in his plan." Here we have the whole gospel of subordination according to General Longstreet: If an officer does not believe success possible, he is not to be expected either to come up to time or to use his best endeavours to carry out his orders, and his want of confidence shall be held as sufficient excuse for inactivity and bad tactics. We need hardly say that such a dogma is absolutely incompatible with the demands of discipline. Discipline exacts something more than a literal obedience to orders. It exacts ungrudging support, untiring effort, and complete self-sacrifice. "I would follow General Lee blindfold" were the words of Stonewall Jackson, and it was for this reason, if for no other, that Lee declared that had Jackson been with him Gettysburg would have been a Confederate victory. "Such an executive officer," he said of Jackson, "the sun never shone on. I have but to show him my design, and I know that if it can be done it will be done. No need for me to send and watch him." In General Longstreet he had a subordinate of very different character to deal with. It is little wonder that the Confederate commander-in-chief displayed impatience at Gettysburg, or that his mood was such as to create the impression that his judgment was in some degree disturbed. We need look no further for the cause than the stubborn opposition and slow movements of the officer commanding the 1st Army Corps; and if Lee was to blame at all in the Gettysburg campaign, it was in taking as his second in command a general who was so completely indifferent to the claims of discipline.

We do not for a moment believe that General Longstreet can fairly be charged with deliberate disloyalty to his superior. He set out on the campaign with a false idea of their relative positions, and when the enemy was encountered his irritation at the rejection of his advice was such that he forgot his duty. His error was amply atoned at a later period; and had he frankly confessed that his temper got the better of him on July 2nd and 3rd, we might easily overlook the one blot on the career of a gallant soldier. But his endeavours to clear his own reputation by assailing those of others, together with the bitterness of his recriminations, serve only to alienate sympathy and destroy respect. General Longstreet did splendid service for the South. He has been subjected to the merciless attacks of many enemies. He has been assailed with accusations which are utterly without foundation; and it may seem harsh in the extreme to criticise the veteran's defence of his military conduct. But where historic truth and great reputations are at stake it is impossible to be silent.





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